REMEDIAL ACTION WORK PLAN

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

KRY SITE

KALISPELL, MONTANA

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SUBMITTED BY: Trihydro Corporation

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List of Acronyms

BMP	Best Management Practices
BNSF	BNSF Railway Company
CECRA	Comprehensive Environmental Cleanup and Responsibility Act
COCs	Contaminants of Concern
DEQ	Montana Department of Environmental Quality
DNRC	Montana Department of Natural Resources and Conservation
ERCLs	Environmental Requirements, Criteria, and Limitations
EPA	United States Environmental Protection Agency
ERP	Emergency Response Plan
FDR	Final Design Report
FSP	Field Sampling Plan
Ft/day	Feet per day
HASP	Health and Safety Plan
IDW	Investigative Derived Waste
KPT	Kalispell Pole & Timber
KRY	Kalispell Pole & Timber, Reliance Refining Company, and Yale Oil Corporation Facilities
LEL	Lower Explosive Limit
LNAPL	Light Non-Aqueous Phase Liquid
LTM	Long-Term Monitoring
LTU	Land Treatment Unit

List of Acronyms (cont.)

MCLs	Maximum Contaminant Levels
MNA	Monitored Natural Attenuation
MPDES	Montana Pollution Discharge Elimination System
NPDES	National Pollution Discharge Elimination System
O&M	Operation and Maintenance
PAHs	Polycyclic Aromatic Hydrocarbons
PCP	Pentachlorophenol
PID	Photoionization Detector
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RBSLs	Risk-Based Screening Levels
RI	Remedial Investigation
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SHPO	State Historic Preservation Office
SPCC	Spill Prevention, Control, and Countermeasures
SPLP	Synthetic Precipitation Leaching Procedure
SWPPP	Storm Water Pollution Prevention Plan
TCLP	Toxicity Characteristic Leaching Procedure

List of Acronyms (cont.)

TCQAP	Task-Specific Construction Quality Assurance Plan
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient
TtEMI	Tetra Tech EM Inc.
UIC	Underground Injection Control
WHO	World Health Organization

1.0 INTRODUCTION

The Kalispell Pole & Timber (KPT), Reliance Refining Company (Reliance), and Yale Oil Corporation (Yale Oil) facilities (collectively referred to as the KRY Site) are state Superfund facilities listed on the Montana Comprehensive Environmental Cleanup and Responsibility Act (CECRA) Priorities List. The Montana Department of Environmental Quality (DEQ) developed a Record of Decision (ROD) which presents DEQ's selected remedial action for the KRY Site. The selected remedy, described in detail in Section 2 of this document and Part 2, Section 11 of the ROD (DEQ 2008b), is based upon a combination of alternatives related to soil remediation, groundwater remediation, and institutional controls.

1.1 PURPOSE AND CONTENT

This Remedial Action Work Plan (RAWP) was developed to serve as a "roadmap" for the remedial design process at the KRY Site. This RAWP provides one conceptual approach to implementation of the remedies specified in the ROD and is intended to outline the most efficient phasing of remedial design work for the most efficient use of resources. The RAWP is not intended to contain exhaustive documentation of site conditions, existing data, or potential remedial action implementation alternatives. The RAWP presents a reasonably efficient design and implementation process in a concise, usable manner.

This document was prepared pursuant to Task Order 11 under Contract No. 407042 between DEQ and Trihydro Corporation (Trihydro). This document is structured to inform the reader about relevant site information and then step the reader through the thought process to effectively implement the remedy specified in the ROD. Section 1 provides the background, history, and setting to give the reader basic knowledge of the KRY Site. Section 2 provides the selected remedy, the remedial action objectives (RAOs), and the performance standards specified in the ROD which will provide the reader with knowledge of what actions are prescribed for the site and the standards required for effective compliance with applicable laws and regulations. Section 3 lists the remedial action components and provides necessary information for effective implementation of each action. This section is designed to list the concerns related to each remedial action and to provide an understanding of how each action may affect other activities at the site. Section 4 provides a list of references for useful documents and documents used in the preparation of this plan. Appendix A contains a table of Environmental Requirements, Criteria, and Limitations (ERCLs) and how they may be addressed by the remedial design and remedial action. Appendix B provides a list of agencies and stakeholders affected by future work at the KRY Site which is intended to assist future remedial actions by identifying affected parties and their contact information prior to detailed work plan preparation for each action.

1.2 SITE LOCATION AND DESCRIPTION

The KRY Site is located northeast of the City of Kalispell in the community of Evergreen in Flathead County, Montana (Township 28 North, Range 21 West, Sections 5 and 8) (Figure 1-1). The site property boundaries generally extend from the Stillwater River on the north and west, Highway 2 and the BNSF Railway Company (BNSF) railroad line on the east, Montclair Drive on the south, and Whitefish Stage Road on the west. The actual KRY Site boundaries are based on the extent of contamination, and groundwater contamination is known to extend to the southeast outside of these general boundaries and across Highway 2 (Figure 1-2). Property ownership information is shown on Figure 1-3.

1.3 FACILITIES OPERATIONAL HISTORY AND IMPACTS

DEQ initially treated the KRY Site as three separate facilities. However, based on a number of facts, DEQ has determined that the facilities must be addressed comprehensively as one site. The rationale for this determination is further addressed in Part 1 of the ROD. The nature and extent of contamination associated with the three facilities that comprise the KRY Site are documented in the Final Remedial Investigation Report (DEQ and TtEMI 2008a) and the Final Feasibility Study (DEQ and TtEMI 2008b) and are briefly summarized in the following subsections.

1.3.1 KALISPELL POLE & TIMBER

KPT, a former wood treating operation, operated from approximately 1945 to 1990 and the surficial area is approximately 35 acres. Soils and groundwater were contaminated from spills or leaks of diesel-based wood treating oil that contained pentachlorophenol (PCP) and dioxins/furans from the treatment vats and aboveground storage tanks as well as drippage from treated wood. Contaminants include PCP, dioxins/furans, polycyclic aromatic hydrocarbons (PAHs), petroleum hydrocarbons, and metals (TtEMI 2005, DEQ and TtEMI 2008a). The approximate extent of soil contamination is shown on Figures 1-4A, 1-4B, 1-5A, 1-5B, 1-6A, 1-6B, 1-7A, 1-7B, 1-8A, and 1-8B, and the approximate extent of groundwater contamination is shown on Figure 1-9. Light non-aqueous phase liquid (LNAPL) is present beneath this portion of the KRY Site and thicknesses measured between August 2006 and July 2007 are shown on Figure 1-10.

BNSF and its predecessors have and BNSF is currently leasing property to lumber-processing companies. Klingler Lumber Company is operating adjacent to the former pole treating area. Montana Mokko/Stillwater Forest Products had operated adjacent to (west of) the former pole treating area, but these operations have ceased and a stone processing company (Glacier Stone Supply) is now operating in its place (DEQ and TtEMI 2008a).

1.3.2 RELIANCE REFINING COMPANY

Reliance, a former oil refinery, operated from 1924 to the 1960s and the surficial area encompasses approximately 7 acres. Onsite disposal of sludge, leaks of sludge and oil from aboveground storage tanks, and releases of petroleum products from the operations of the refinery and the railroad have impacted the soil with petroleum hydrocarbons and some metals, notably lead. LNAPL is present beneath this portion of the KRY Site, and groundwater is contaminated with petroleum hydrocarbons, PCP, dioxins/furans, PAHs, and metals (TtEMI 2005, DEQ and TtEMI 2008a). The approximate extent of soil contamination is shown on Figures 1-4A, 1-4B, 1-5A, 1-5B, 1-6A, 1-6B, 1-7A, 1-7B, 1-8A, and 1-8B, and the approximate extent of groundwater contamination is shown on Figure 1-9. Average LNAPL thicknesses measured between August 2006 and July 2007 are shown on Figure 1-10.

The property south of the rail spur is owned by the Montana Department of Natural Resources and Conservation (DNRC) and is currently vacant and fenced. The area north of the spur is owned by Swank Enterprises and is used as a staging/storage yard for construction equipment and materials. BNSF owns property including that underlying the spur line and the main line at the site (Figure 1-3); both lines are still being used.

1.3.3 YALE OIL CORPORATION

Yale Oil, a former petroleum bulk plant and product refinery, operated from 1938 to 197 and the surficial area encompasses approximately 2.3 acres. Leaks and possible spills from aboveground storage tanks have impacted on-site soils. Thermal desorption, using a permitted unit, was conducted on the soils to remove petroleum hydrocarbon contamination. However, groundwater beneath this portion of the KRY Site is contaminated with low levels of PCP, dioxins/furans, and petroleum hydrocarbons (TtEMI 2005, DEQ and TtEMI 2008a). The extent of groundwater contamination is shown on Figure 1-9. An office supply store, OfficeMax, is currently located on this portion of the KRY Site.

1.4 PREVIOUS INVESTIGATIONS, REGULATORY INVOLVEMENT, AND INTERIM ACTIONS

Numerous environmental investigations have been conducted on the properties that make up the KRY Site, both collectively and separately. In addition, several response actions (interim actions) have been conducted. The detailed list of investigations, regulatory involvement, and interim actions for the KRY Site is presented in the ROD (DEQ 2008b).

1.5 SITE TOPOGRAPHY, GEOLOGY AND HYDROGEOLOGY

The KRY Site is located adjacent to or in proximity of the Stillwater River, just north of Kalispell, at an elevation of 2,920 feet above mean sea level (Thermoretec 2001).

Three distinctive hydrostratigraphic units are present at the KRY Site. From the ground surface downward, these units can be described as (1) an unconfined aquifer composed of unconsolidated alluvium with discontinuous lenses of clays and/or silts, (2) a low-permeability confining unit composed of clayey gravelly silt and silty clay at the base of the unconfined aquifer, and (3) a confined aquifer system composed of unconsolidated alluvium underlying the low-permeability unit. Drilling during the Remedial Investigation (RI) or previous investigations did not penetrate the top of the confined aquifer (DEQ and TtEMI 2008a). The dominant lithology of the surficial unconfined aquifer at the KRY Site is sandy silty gravel and gravelly silty sand. Also present are intervals of clay, silt, silty fine- to medium-grained sand, and fine- to coarse-grained sand. Cobbles are present throughout the KRY Site within various lithologies but are generally found within the sandy gravel and gravelly sand (DEQ and TtEMI 2008a).

In general, unconfined groundwater is encountered at approximately 20 feet below ground surface and extends from 80 to 125 feet deep in certain areas of the Site. Below the unconfined groundwater unit is a dense confining unit consisting of clays and gravelly silts. The confining unit was encountered from a depth of 80 feet down to 243 feet below ground surface at various locations throughout the KRY Site. The maximum depth and thickness of the confining unit was not determined during the RI. However, this confining unit appears to limit the deeper migration of contamination in the groundwater (DEQ and TtEMI 2008a).

Groundwater level measurements indicate that groundwater flow is generally toward the southeast in both the shallow and deeper portions of the unconfined aquifer (Figures 1-11 and 1-12). Hydraulic conductivities of 17 to 326 feet per day (ft/day) were calculated from the results of an aquifer pumping test conducted in August 2006 as part of the RI (DEQ and TtEMI 2008a). Residential and public water supply wells that supply drinking water and commercial wells that could supply drinking water are located adjacent to and within the KRY Site in the shallow groundwater (Figure 1-13) (DEQ and TtEMI 2008a).

1.6 STRUCTURES, UTILITIES, AND OTHER OBSTRUCTIONS

There are several structures, utilities, and other obstructions present at the KRY Site that may affect the implementation of the remedy at the site. These features are presented in Figure 1-13 and include the following:

- Northwest Energy natural gas transmission line located on the eastern portion of the site
- Northwest Energy natural gas distribution line located under Flathead Drive
- Evergreen Water and Sewer District water distribution line located under Flathead Drive
- Evergreen Water and Sewer District water distribution line located on the western portion of the site
- BNSF/Mission Mountain Railroad main rail line located on the eastern portion of the site
- BNSF/Mission Mountain Railroad/Montana Mokko spur rail line located on the northern portion of the site
- Flathead Drive (maintained by Flathead County) located in the central portion of the site
- BNSF ozonation system located on the western portion of the site
- Buildings labeled as “Former KPT Co. Buildings” on the western portion of the site
- Numerous buildings located primarily on the western and southeastern portions of the KRY Site

Discussion of the interactions of the remedies and these structures, utilities, and other obstructions is included in Section 3.

2.0 SELECTED REMEDY, REMEDIAL ACTION OBJECTIVES, AND PERFORMANCE STANDARDS

2.1 KRY SITE SELECTED REMEDIES

The remedy for the KRY Site consists of remediation of contaminated media to cleanup levels described in the ROD, with reliance on institutional controls. Numerous interim actions have occurred at the KRY Site. DEQ considered the interim remedial actions and integrated that information and actions into the remedy to the extent possible. Details of the remedy are provided in Part 2, Section 11.0 of the ROD. Major components of the remedy are summarized below.

2.1.1 INSTITUTIONAL CONTROLS

Institutional controls in the form of groundwater use and land use restrictions are necessary as cleanup levels are based on commercial/industrial exposure and groundwater contamination is present above cleanup levels. To protect human health and limit migration of contaminants through pumping of groundwater, the remedy partially relies on institutional controls in the form of a controlled groundwater area to ensure that no additional wells (except for remediation purposes) are installed within or adjacent to the area of contamination associated with the KRY Site. DEQ will prepare and supply adequate supporting information to petition the DNRC to establish a controlled groundwater area for the KRY Site. Groundwater monitoring will be used to track plume concentrations until cleanup levels are met. The remedy also requires restrictive covenants to prevent or limit groundwater withdrawals from the area, prohibit residential use, and restrict areas where engineered components of the remedy have been or will be constructed as provided in Section 75-10-727, MCA. These restrictive covenants will be placed on property impacted or potentially impacted by the KRY Site. Institutional controls will be in effect until DEQ determines they are no longer needed to ensure protection of human health. Changes to local zoning regulations may also be proposed.

2.1.2 SOIL REMEDIES

The soil remedies specified in the ROD include excavation of contaminated soils throughout the KRY Site. The following is a discussion of the components of the soil remedies:

Lead-Contaminated Soils: Lead-contaminated soil exists on the eastern portion of the KRY Site (Figures 1-4A, 1-4B, 17-A, and 1-7B). The remedy includes excavation and disposal of the lead-contaminated soils at an offsite disposal facility. Some of the lead-contaminated soil may require stabilization to reduce toxicity and leachability before disposal can occur. Characterization sampling and a treatability study may be required during the design phase.

Petroleum Sludge: Petroleum sludge is present throughout the eastern portion of the KRY Site (both at the surface and at depth). The approximate extent of the sludge and observed depths of sludge are shown on Figure 2-1. The remedy is source removal of petroleum sludge via excavation followed by recycling or disposal at an offsite facility, possibly in an asphalt batch plant. Known petroleum sludge at the KRY Site will be excavated. The sludge exists in varying degrees of viscosity and is intermixed with debris or soil. Sludge material that is mixed with debris and therefore not able to be recycled will be disposed of at an off-site facility, after stabilization, if required. Sludge material that cannot be separated from soils will be treated along with soils in a land treatment unit (LTU). Characterization sampling and a treatability study may be required during the design phase.

Dioxin/Furan-Contaminated Soils: Areas of dioxin/furan only-contaminated surface soils exist throughout the KRY Site, which are not classified as F032 listed hazardous waste (Figures 1-4A, 1-4B, 1-6A, and 1-6B). The remedy for soils contaminated with dioxins/furans only (no PCP) is consolidation into an onsite repository and capping. Placement of the dioxin/furan contaminated soil (no PCP) into the repository will reduce the volume of soil to be treated in the PCP LTU, which is appropriate since dioxins/furans may not be effectively treated to cleanup levels through bioremediation in an LTU. Dioxin/furan-contaminated soils co-located with PCP will be treated through bioremediation in an LTU; if PCP cleanup levels are met but dioxin/furan cleanup levels are not, that dioxin/furan-contaminated soil will also be placed in the repository, as discussed below. Institutional controls in the form of restrictive covenants, engineering controls, and long-term maintenance are needed to protect the repository from being compromised.

PCP- and Petroleum-Contaminated Soils: The majority of excavated contaminated soils and contaminated soils excavated as part of the more-viscous free-product recovery component (see below) of the remedy will be treated using LTUs. The soils contaminated with PCP are classified as F032 listed hazardous waste. The remedy for treating the excavated soils contaminated with PCP (Figures 1-4A, 1-4B, 1-5A, and 1-5B), which are co-located with dioxins/furans, and petroleum hydrocarbons (Figure 1-4A, 1-4B, 1-8A, and 1-8B) is bioremediation in an LTU. However, since dioxins/furans may not be effectively treated to cleanup levels through bioremediation, only dioxin/furan-contaminated soils that are also contaminated with PCP will be placed into an LTU. If after treatment in the LTU, all soils meet appropriate cleanup levels, except for dioxins/furans, the treated soil will be placed in the onsite dioxin/furan repository and capped (see above). Petroleum-contaminated soils will be placed into a separate LTU from the PCP and dioxin/furan-contaminated soils since the petroleum-contaminated soils are not hazardous waste. Treated soils that meet cleanup levels will be available for use onsite as backfill material, although the option of using clean fill

will also be retained to allow for more rapid redevelopment of the KRY Site, if necessary. Treatability studies and/or pilot tests may be required to optimize bioremediation.

Sawdust: Additional investigations in the sawdust area are necessary. Reducing conditions may be mobilizing some metals from the soil, resulting in the high levels of manganese observed in groundwater in the vicinity of the sawdust. In addition, buried sawdust can result in methane generation at explosive levels, which may create a safety issue for on-site workers. Sampling of the soil gas in the sawdust area for methane and further characterization of a reducing environment are necessary before requiring excavation of the sawdust. Based upon the results of the sampling, DEQ will determine what actions are necessary for the sawdust present at the KRY Site.

2.1.3 GROUNDWATER REMEDIES

The groundwater remedies specified in the ROD include free product removal, chemical oxidation, monitored natural attenuation (MNA) and long-term monitoring (LTM) of groundwater throughout the KRY Site. The following is a discussion of the components of the groundwater remedies:

Free Product Removal: The remedy for removing less-viscous free product on groundwater from the western portion of the KRY Site includes the use of recovery technologies such as trenches or wells. The remedy for removal of more-viscous free product from the eastern portion of the KRY Site is excavation along with contaminated soils. Product remaining on the groundwater after excavation will be recovered, possibly using booms or skimming devices in the open excavation. Free product from the KRY Site that is found to contain PCP will be disposed of at an off-site facility as F032 RCRA listed hazardous waste. Free product that does not contain PCP will be recycled. Pilot tests may be necessary to optimize the system design for the less-viscous free product recovery and will be conducted during remedial design.

Chemical Oxidation of Contaminated Groundwater Plume: The remedy for contaminated groundwater is in-situ chemical treatment to reduce the concentrations of PCP in groundwater to meet cleanup levels. Groundwater contaminated with PCP is classified as F032 listed hazardous waste. Chemical treatment will also likely decrease the concentrations of dioxins/furans in groundwater, but may not reduce concentrations enough to reach the cleanup level for dioxins/furans in groundwater. If dissolved petroleum contamination is present in this area, the chemical oxidation system will also be effective in treating that contamination. The oxidant will be injected into the groundwater throughout the PCP and dioxin/furan plumes, including injections into the deeper portion of the aquifer to address

contamination at depth. Bench scale and/or pilot testing may be conducted to optimize system design and determine the most effective oxidant(s).

MNA for Petroleum and Metals: The remedy relies on excavation of contaminated soils and sludge, and removal of free product on groundwater to eliminate the sources of dissolved-phase petroleum contamination and metals contamination in groundwater at the KRY Site. High concentrations of petroleum compounds, iron, manganese, and arsenic currently exist in groundwater at the KRY Site. The petroleum contamination is closely tied to the presence of free product in contact with the groundwater and the high levels of metals are likely due to the breakdown of free product and petroleum contaminated soils in these areas. Another area of high concentrations of iron and manganese exists in the vicinity of well KRY-103A, on the northwestern edge of the KRY Site (Figures 2-2, 2-3, and 2-4). These increased concentrations may be related to the presence of buried sawdust in this area. Therefore, it is expected that removal of the free product and overlying contaminated soil, followed by MNA, will significantly decrease the petroleum and metals concentrations in groundwater through time. Regular sampling as part of the long-term groundwater monitoring program will track the decline in the petroleum and metals concentrations in groundwater at the KRY Site.

Long-Term Monitoring: The remedy includes sampling of many of the existing monitoring, commercial/industrial, and residential wells that now includes 114 monitoring wells, 7 commercial/industrial wells, and 5 residential wells, and any additional wells that may be installed. The wells that will be included in the LTM network will be determined in the remedial design phase. At a minimum, monitoring of selected wells will be conducted on a semi-annual basis during high and low groundwater elevations for the first five years and with the frequency possibly reduced thereafter, until cleanup levels are achieved.

2.2 REMEDIAL ACTION OBJECTIVES

RAOs are general descriptions of what DEQ strives to accomplish to protect public health, safety, and welfare and the environment against unacceptable risk. RAOs were developed for each contaminated medium at the site. RAOs were not developed for surface water or river sediment as contaminants of concern attributable to the site were not detected at concentrations exceeding screening levels. RAOs were not developed for ecological receptors because there are relatively few ecological receptors at the KRY Site and the cleanup levels protective of human health will also reduce limited ecological exposure that may occur.

RAOs for groundwater at the KRY Site include:

- Meet groundwater cleanup levels for contaminants of concern (COCs) in groundwater throughout the KRY Site.
- Comply with ERCLs for free product and COCs in groundwater.
- Reduce potential future migration of free product and contaminated groundwater plume.
- Prevent exposure of humans to free product and to COCs in groundwater at concentrations above cleanup levels.

RAOs for soil at the KRY Site include:

- Prevent migration of COCs that would potentially leach from soil to groundwater.
- Prevent exposure of humans to free product/sludge and to COCs in soil at concentrations above cleanup levels.
- Meet soil cleanup levels for COCs.
- Comply with ERCLs for free product/sludge in soil.

2.3 ENVIRONMENTAL REQUIREMENTS, CRITERIA, OR LIMITATIONS

ERCLs are grouped into three categories: contaminant-specific, location-specific, and action-specific. Contaminant-specific requirements are those that establish an allowable level or concentration of a hazardous or deleterious substance in the environment or which describe a level or method of treatment for a hazardous or deleterious substance. Location-specific requirements are those that serve as restrictions on the conduct of activities because they are in specific locations (e.g., 100-year floodplain). Action-specific requirements are those that are relevant or applicable to implementation of a particular remedy. Action-specific requirements do not in themselves determine the remedy but rather indicate the manner in which the remedy must be implemented. Detailed descriptions of each ERCL and how the remedy will achieve compliance are listed in Appendix A.

2.4 REMEDIAL ACTION PERFORMANCE STANDARDS

Performance standards for the remedial action are established as the cleanup levels in the ROD. Performance standards for groundwater and soil are discussed below.

2.4.1 GROUNDWATER PERFORMANCE STANDARDS

Groundwater performance standards are the cleanup levels stated in the ROD (Table 2-1). Groundwater cleanup levels were developed to be protective of human health and the environment and comply with ERCLs. As groundwater at the site is a drinking water source to the nearby Evergreen Water and Sewer District wells, drinking water standards were applied as the performance standards. Risk-based screening levels (RBSLs) were used for petroleum compounds, and the tap water screening level was used for 1,2,4-Trimethylbenzene. Background levels were used for manganese and dioxin/furan cleanup levels. DEQ determined that using screening levels is appropriate for cleanup levels because the assumptions used to calculate water quality standards and the screening levels are the same.

2.4.2 SOIL PERFORMANCE STANDARDS

Soil performance standards are the cleanup levels stated in the ROD (Table 2-2). Direct contact cleanup standards were developed for residential surface soil (dioxins/furans only) and for commercial/industrial surface and subsurface soil (for construction or excavation). These cleanup levels were calculated using equations developed by EPA (EPA 2008). Compounds were separated based on their effect (i.e., non-carcinogenic or carcinogenic). Cleanup levels for the non-carcinogenic compounds were calculated so that the total hazard index for compounds with the same target organs or critical effects does not exceed 1 for any organ or effect. Cleanup levels for carcinogenic compounds were calculated so that the cumulative cancer risk does not exceed 1×10^{-5}. The cleanup level for sludge is based on visual observation, and visible sludge must be removed from soil at the site.

DEQ also developed site-specific cleanup levels for soil leaching contaminants to groundwater at the KRY Site. These cleanup levels are concentrations of COCs that may remain in surface and subsurface soils that are protective of groundwater.

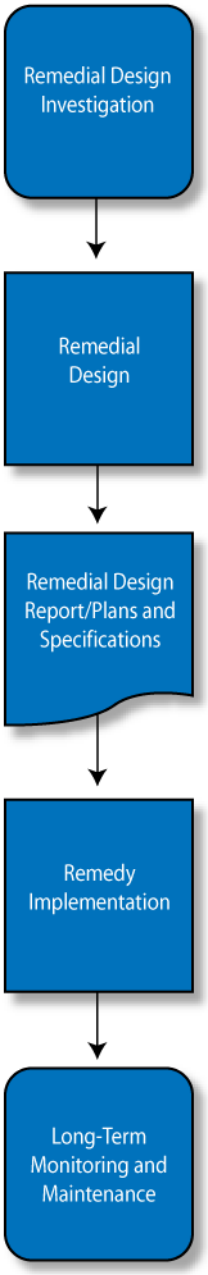
To simplify dioxin/furan analysis, a toxicity equivalence quotient (TEQ) using World Health Organization (WHO) 2005 toxicity equivalence factors (TEFs) is calculated for each sample and compared to a TEQ cleanup level (WHO 1998 and 2005). DEQ also calculated a cleanup level representing a total carcinogenic polycyclic aromatic hydrocarbon (cPAH) concentration using the approach outlined in EPA Guidance (EPA 1993). This concentration is based on the toxicity of benzo(a)pyrene. The relative toxicity of each carcinogenic PAH compound relative to benzo(a)pyrene is used to adjust its concentration. Following this adjustment, the resulting concentrations are summed. The summed concentration must not exceed the total carcinogenic PAH cleanup level. Cleanup levels for PAHs that are non-carcinogenic are included with the other noncarcinogenic compounds.

To protect human health and the environment, the most protective of the leaching to groundwater cleanup levels or the direct contact levels will be used as the performance standard. For compounds with a leaching number for both surface soil and subsurface soil, the cleanup level for surface soil will be used where there is only surface soil contamination. If subsurface soil contamination exists, the subsurface soil leaching cleanup level will apply to both the surface and subsurface soil in that area. For compounds where the leaching to groundwater cleanup level is not the most protective and where the excavation cleanup level is lower than the commercial cleanup levels, surface soil will be cleaned up to excavation cleanup levels.

The appropriate performance standards will also be used for soils treated in the LTUs, based on the location and depth at which the soil will be placed. An alternative procedure for determining the cleanup levels for leaching to groundwater may be used, which involves the Synthetic Precipitation Leaching Procedure (SPLP). This procedure is detailed in the ROD and may be used at the option of the contractor performing the soil remedy and LTU operation.

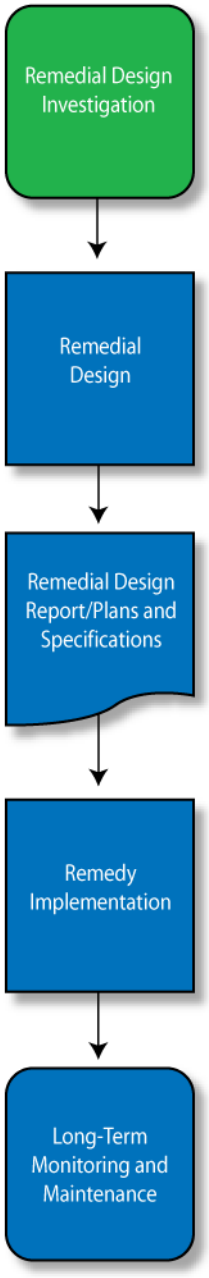
3.0 REMEDIAL DESIGN/REMEDIAL ACTION COMPONENTS AND IMPLEMENTATION

The selected remedy for the KRY Site is presented in the ROD and summarized in this document (Section 2) and implementation of the remedy components will include preparation of pre-design documents, pre-design investigations, treatability studies, pilot studies, design documents and work plans for the implementation of the remedial actions. A general flow chart illustrating the remedial design/remedial action process moving forward from issuance of the ROD is shown below and on Figure 3-1. Specific components of each step of the process are discussed in subsequent subsections.



3.1 PRE-DESIGN INVESTIGATIONS, TREATABILITY STUDIES, AND PILOT TESTING

Pre-design investigations, treatability studies, and pilot testing are often integral components of the remedial design process prior to implementation of a selected remedy. The potential data gaps to be investigated, treatability studies, and pilot testing that could be part of the remedial design for the remedy components are presented in a process flow chart on Figure 3-2. These items are discussed in more detail in the following subsections.



3.1.1 SUGGESTED PRE-DESIGN INVESTIGATION PLANNING DOCUMENTS

Several plans should be submitted by the design contractor before field activities are commenced. Some documents that may be submitted include:

- Pre-Design Investigation Work Plan – Work plans typically vary in content and level of detail depending upon accompanying plans that are submitted. For purposes of this document the Work Plan will be a compilation of documents that will include a Sampling and Analysis Plan (SAP), Health and Safety Plan (HASP), Site Management Plan, and a Contingency Plan. The individual components of the work plan are described below.
- SAP – The SAP is a plan that details the methods and procedures concerning analytical methods employed during sampling and data evaluation. The SAP incorporates the information from two separate but related documents, the field sampling plan (FSP) and the quality assurance project plan (QAPP). Some details of the FSP may include site background, sampling objectives, sample location and frequency, sample designation, sampling equipment and procedures, sample handling and analysis, and investigative derived waste (IDW) handling and disposal procedures. Some details of the QAPP may include required documentation and records, sampling process design, sampling method requirements, analytical method requirements, quality control requirements, and validation and verification methods. These reports may be submitted separately, but generally are submitted together as the SAP.
- HASP – The contents of the HASP must include, but are not limited to, the requirements of 29 CFR 1910.120 (HAZWOPER). Additionally, the HASP should contain an emergency response plan (ERP) in order to handle potential site emergencies and to minimize the risks associated with a response. The ERP must include pertinent information such as site topography, site layout, prevailing weather conditions, and procedures for reporting incidents to local, state, and federal agencies.
- Site Management Plan – The site management plan summarizes the security provisions to be taken during the remedial design. Security provisions may include methods for limiting access to the site, waste disposal or storage practices, management responsibilities, and site security.
- Contingency Plan – The contingency plan is written to protect the local community in the event of an accident or emergency. Two examples of a contingency plan are an air monitoring plan and a spill prevention, control, and countermeasures (SPCC) plan.

3.1.2 SUGGESTED PRE-DESIGN INVESTIGATION ACTIVITIES

Design activities for several remedial action components at the KRY Site could potentially benefit from additional investigations prior to finalization of the designs. Pre-design investigations and/or pilot and treatability studies should

be developed to address remaining data gaps related to specific areas of the site and management of soils from these areas. These pre-design investigations are suggested to better define the extent of site impacts and together with pilot/treatability testing will likely help to fully design the remedial actions. The following are some suggested pre-design investigations, pilot studies, and treatability tests based on review of existing data and the ROD (DEQ 2008b).

3.1.2.1 NORTHWEST SURFACE DIOXIN/FURAN – PRE-DESIGN INVESTIGATION

Dioxin/furan concentrations above the screening standard have been observed at KRY103A and SS05-B1 (Figure 1-4A). The extent of this contamination has not been fully investigated. Investigation of this area prior to remedy implementation is suggested to better define the extent of contamination, so that confirmation sampling does not reveal a larger contaminated area than expected during design. A work plan for this investigation may include focused shallow soil investigation activities in the areas of KRY103A and SS05-B1 to further define the extent of surface soil dioxin/furan impacts and should include details on sampling techniques, locations, analytical parameters, field screening, and coordination with the Glacier Stone and Klingler Lumber operations, as necessary.

3.1.2.2 SAWDUST – PRE-DESIGN INVESTIGATION

Sawdust may be present throughout the Stillwater Forest Products and Montana Mokko properties. It is possible that sawdust is present from the surface to the water table, and may have been used to fill former channels of the Stillwater River. The ROD states that investigation of this area shall include a soil gas investigation into whether sawdust decomposition is generating methane in explosive quantities, and investigation into the possibility that reducing conditions caused by sawdust decomposition are mobilizing metals in the groundwater. A work plan for this investigation may include focused subsurface investigation activities (i.e., test pits, borings, groundwater sampling, vadose zone vapor monitoring, etc.) at the Stillwater Forest Products, Inc. property adjacent to the Stillwater River to evaluate the effects of the sawdust on metals in groundwater, as well as the possibility of explosive gasses being generated by decomposition of the sawdust. The vadose zone vapor monitoring may involve installing discrete depth soil gas sampling points, performing field screening with a PID and LEL monitor, and submitting vapor samples for laboratory analysis. The work plan may include details on collection procedures for vapor samples and verification of the seal between soil gas sampling points and the atmosphere. As stated in the ROD, reducing conditions in the sawdust area may be mobilizing some metals from the soil into the groundwater. Groundwater sampling procedures likely will include monitoring pH and ORP at monitoring wells in the area to determine if reducing conditions are causing metals mobilization. The area to be investigated likely includes the waste stone pile produced by the Glacier

Stone operation. Sampling under this pile will require considerable advance notice to Glacier Stone so that the waste stone may be processed or moved before access to the area is needed.

3.1.2.3 RAILROAD MAIN LINE – PRE-DESIGN INVESTIGATION

Contamination extends under the railroad main line at the KRY Site. Investigation is suggested into the extent of the contamination along the rail line as well as the extent of contamination on the east side of the line. This investigation will allow for planning for removal of the main line and replacement of the line as expeditiously as possible.

The suggested investigation will consist of soil borings in the vicinity of the main line. This will likely require coordination with the railroad and the property management company at least 60 days in advance of the investigation. A work plan for this investigation may include borings beneath the main railroad right-of-way on the eastern portion of the site. Coordination with Mission Mountain Railroad and Watco Companies is needed before drilling within the railroad right-of-way (at least 60 days in advance). The investigation work plan will likely include details on procedures such as directional drilling to sample soils underneath the railroad tracks without damaging the tracks or the substructure. Additional details may include soil monitoring parameters, field screening methods and measurements, depth to groundwater, and a sampling plan.

3.1.2.4 LEAD-CONTAMINATED SOIL – PRE-DESIGN INVESTIGATION / PILOT STUDY

Based on previous investigations lead concentrations in the lead contaminated soils exceed limits for disposal in non-hazardous waste landfills. Therefore lead stabilization may be required unless the soil is taken to a hazardous waste landfill. Characterization sampling of the lead-contaminated soil is suggested, along with treatability testing on stabilization compounds and methods. In addition, PCP contamination may be co-located with lead-contaminated soil (Figure 1-4A and 1-5A). A work plan for this investigation may include focused subsurface investigation activities (i.e., test pits, borings, etc.) on the eastern portion of the site to further define the extent of soil that requires stabilization prior to disposal, the characteristics of the hydrocarbon contamination co-located with the lead-contaminated soil, and the extent of potential PCP contamination co-located with lead-contaminated soil.

3.1.2.5 LNAPL RECOVERY – PILOT STUDY

LNAPL recovery pilot testing is suggested in areas where the less-viscous LNAPL will be recovered using methods other than excavation. Pilot testing should focus on the feasibility and effectiveness of recovering LNAPL using belt skimmers, passive skimmers, pumps, vacuum extraction, or other methods. A work plan may be prepared to evaluate

the efficacy of removing the less-viscous LNAPL from the subsurface. The work plan may include components such as well installation details (if necessary), equipment and appurtenance details, parameters to be monitored (e.g., fluid levels and vacuum in the recovery and surrounding wells), monitoring frequency, testing duration, site lithology, well and/or trench location(s), storage tank location(s), and disposal method for recovered LNAPL, which may be contaminated with PCP.

3.1.2.6 SLUDGE TESTING – PILOT STUDY

The proposed remedy for petroleum sludge is excavation and recycling or disposal, possibly at an asphalt batch plant. Testing of the sludge may be required prior to acceptance at a batch plant, in order for the plant operators to meet their specifications for the asphalt. Testing on its composition may also be required for disposal if recycling is not feasible. A work plan for the characterization of the sludge may include sampling methods, analytical parameters, sampling locations, and possibly pilot-scale excavation of sludge for use at a batch plant, to confirm that the asphalt can meet the specifications required. The work plan will require coordination with the batch plant (if recycling in this way is an option) in order to perform the correct analyses and obtain useful data.

3.1.2.7 HYDROCARBON AND PCP – TREATABILITY STUDY

Treatability studies are suggested to be performed on hydrocarbon and PCP contaminated soil. Treatability studies to evaluate limiting nutrients (nitrogen or phosphorus) and whether the addition of these nutrients will increase the rate of contaminant removal, as well as the timeframe required for contaminants to reach the cleanup levels, are suggested.

3.1.2.8 PCP AND DIOXIN/FURAN OXIDATION TREATABILITY STUDY AND PILOT TESTING

A primary component of the groundwater remedy is chemical oxidation of contaminants. Bench scale and pilot testing of oxidants has been performed in some areas of the site. In addition, pilot testing on application techniques may be needed for design. The areas under the soil repository and LTUs may be treated with oxidants prior to construction of the repository and LTUs. The oxidant could be applied using injection techniques similar to the previous pilot testing if the excavations are partially backfilled to several feet above the water table (which would be necessary for LTU/repository construction). Alternatively, oxidants could be applied to the exposed groundwater in the open excavation. This application alternative may be more cost-effective. A chemical oxidation work plan to evaluate the efficacy of remediating PCP and dioxin/furan may be prepared. Bench-scale testing and/or pilot study may determine the most effective oxidant(s) and possible application rates/methodologies prior to full scale implementation.

Investigations of different oxidants may also focus on cost-effectiveness. The work plan may contain sampling parameters and frequency to monitor oxidant effectiveness, site lithology, hydraulic gradient, transmissivity, injection/application rates and frequency, and injection point spacing.

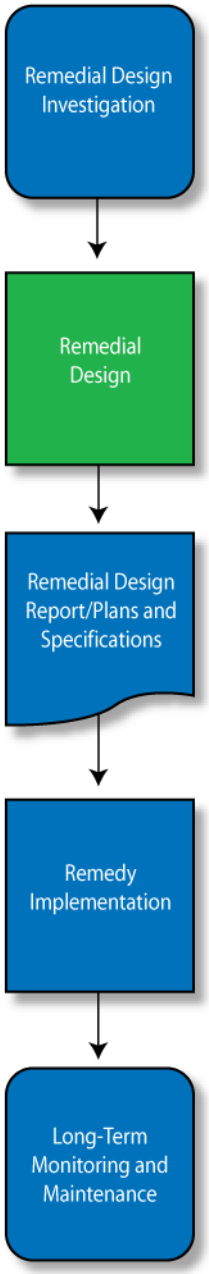
Pilot testing performed to date include activated sodium persulfate and Cool-Ox™ (activated calcium peroxide) testing, as well as the installation of the BNSF ozonation system. Confirmation sampling has not been completed for the Cool-Ox™ pilot test, and therefore analysis has not been performed. Potential data gaps will be identified during the pilot test analysis. Data gaps for activated sodium persulfate include the fate of residual sulfate concentrations. Sulfate concentrations in groundwater may be a concern both for exceeding the National Secondary Drinking Water Regulations sulfate concentration of 250 mg/L (EPA 2009), and for generation of hydrogen sulfide by microorganisms using sulfate as an electron acceptor in areas with remaining petroleum contamination.

3.1.2.9 LTU OPERATIONS – PILOT STUDY

Pilot and/or bench scale tests may be performed to evaluate amendments and water addition to LTUs to treat PCP- and hydrocarbon-contaminated soil. The work plan may include soil collection methods and locations, simulated tilling methods, nutrients to be tested, test monitoring, test volume, analytical parameters to be measured (e.g., pH, nitrate, phosphate, contaminants of concern, etc.), and duration of testing. In addition the degradation rates of contaminants could be evaluated to confirm that previous estimates for the remediation timeframe are reasonable.

3.2 REMEDIAL DESIGN

Remedial design is required to physically remove and manage soil and groundwater at the KRY Site. Remedial design components are discussed in the following subsections.



3.2.1 SOIL REMEDY DESIGN

The soil remedy design will be completed based on data collected during the remedial design investigation. The remedial designs will be presented in the design documents, discussed below. General components to be designed (that will apply to several of the soil remedy components) include equipment staging area(s), decontamination of equipment and personnel, confirmation sampling procedures, analytes, and frequency, spill prevention and response, and emergency response. Discussion of components of the soil remedy is presented below.

Sludge Removal – the design for the sludge removal may include estimating the quantity of sludge accessible, disposal and/or recycling options for the sludge, transport procedures, and possibly planning a schedule for sludge removal. The physical properties of the sludge may vary with temperature, so that it may be easier to handle under some weather conditions than others.

LTU Design – LTU design will include a grading plan for the soil below the liners, design of the liner and leachate collection systems, and design of amendments and/or irrigation. RCRA requirements as displayed in Appendix A must be addressed during the design phase. These requirements include staging piles created during LTU construction, runoff/runon controls, storage and disposal of water containing PCP such as leachate, post-treatment cleanup levels, and decommissioning requirements. Dust suppression and air borne contaminant concentrations during LTU construction and operation may need to be considered in the design phase, both to comply with air regulations and for site worker safety. In addition the LTUs will need to be sized based on the estimated quantity of soil to be placed in each one and the desired treatment timeframe. The reconstruction of the spur rail line will need to be considered during the design of the PCP LTU, if the final LTU location and the spur line still conflict. This could be resolved by relocating the spur line, reducing the footprint of the LTU, splitting the LTU into two units, or by other means.

Excavated Soil Stockpile Area – temporary staging of excavated soil will likely be required as the proposed LTU and soil repository locations are in areas that must first be excavated. As the PCP-contaminated soil is an F032-listed waste, the PCP stockpile must have a liner and a runoff/leachate collection system. These components may be used for the hydrocarbon and dioxin/furan stockpiles as well, to reduce the risk of further contamination. The stockpile area will need to be sized, the liner(s) and runoff/leachate collection system(s) will need to be designed, and a traffic flow plan for trucks and equipment will likely need to be developed. Excavation could be staged to reduce the amount of stockpiled soil, so that some of it could be placed directly into the LTUs or dioxin/furan repository.

Lead-Contaminated Soil Disposal and Stabilization – if lead contaminated soil will be disposed of at the Flathead County Landfill, stabilization procedures must be implemented so that the soil meets non-hazardous waste disposal limits based on Toxicity Characteristic Leaching Procedure (TCLP) analysis. Procedures and methods for lead stabilization (i.e., whether lead must be stabilized prior to excavation, based on hazardous waste generation requirements) must be developed. Methods for handling and treating/disposing of soil that is contaminated with PCP, hydrocarbons, and lead must be developed.

Viscous LNAPL Removal – Removal of viscous LNAPL present at the KRY Site will be designed and planned. Although the LNAPL removal is a component of the groundwater remedy, a portion of the viscous LNAPL will be removed by excavation along with the soil. Methods for removing the LNAPL from the groundwater surface in the open excavation include booms, vacuum recovery, pumps, or other means. Planning for storage, transport, and disposal of the LNAPL (including the possibility that it contains PCP) are suggested.

Dioxin/furan Repository – A grading plan, sizing, design of cap, and design of cells are suggested for the dioxin/furan repository. Other potential components include a liner and leachate recovery system, but these components likely will not be necessary if the cap is constructed of material that has low permeability to limit infiltration. Compaction requirements may be part of the design, particularly if the capped repository area may be used for building construction (likely slab-on-grade) as a part of redevelopment.

3.2.2 GROUNDWATER REMEDY DESIGN

The groundwater remedy design will be completed based on the results of the remedial design investigation. The groundwater remedy consists of implementation of the chemical oxidation, LNAPL recovery, MNA, and LTM.

Chemical Oxidation – Selection of one or more oxidants and application techniques will be required. Based on the oxidant chosen the quantity will be determined, the number of injection events, and the injection spacing. Oxidant mixing and storage areas may need to be designed. Additional components will be designed if an installed system (i.e., ozone sparging) is to be used instead of aqueous-phase injections.

LNAPL Removal – Removal of viscous LNAPL was discussed with the soil remedy design in Section 3.2.1. Less-viscous LNAPL will be removed from the subsurface using recovery technologies such as trenches or wells with pumps or skimmers. Planning for storage, transport, and disposal of the LNAPL (including the possibility that it contains PCP) is necessary.

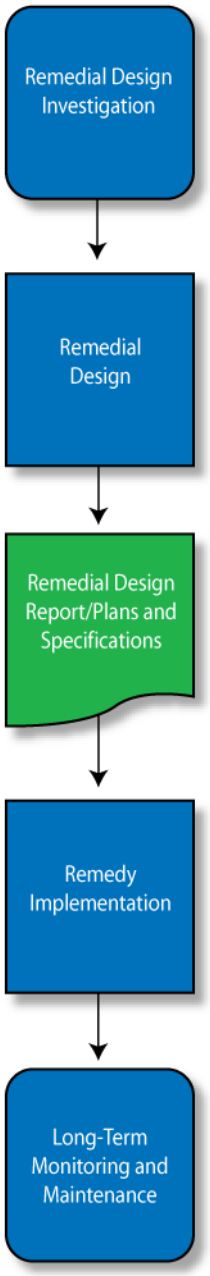
MNA – MNA design will consist of developing a monitoring program to confirm that attenuation of metals and petroleum is occurring, and contaminant extents and concentrations do not show an increasing trend.

Long-Term Monitoring – LTM will be used to monitor natural attenuation of petroleum and metals compounds in groundwater, and to evaluate the effectiveness of the soil and groundwater remedies. The monitoring well network, monitoring frequency, and analytes will be determined during the design phase. An approach to phasing out or reducing monitoring as portions of the site achieve cleanup levels should be developed as well.

Monitoring wells in excavation areas will be properly abandoned during the soil remedy implementation. Some of these wells will need to be replaced, and the monitoring well network may be supplemented with new wells. These wells should be installed when the soil remedy (at least in the area of the well) is complete to limit the possibility of the new wells being damaged.

3.3 REMEDIAL DESIGN REPORTS PLANS & SPECIFICATIONS

Pre-design investigation results, treatability study and pilot study results, and the necessary engineering designs will be combined into a variety of reports, plans, and specifications that will effectively become the remedial design for a specified remedial action or actions at the site. These components are described in more detail in the following subsections.



3.3.1 SUGGESTED REMEDIAL DESIGN DOCUMENTS

The Remedial Design is a series of engineering reports, documents, specifications, and drawings that detail the steps to be taken during Remedial Action activities to meet the goals established in the ROD. Remedial design activities are outlined in more detail in the Remedial Design/Remedial Action Handbook (USEPA 1995). Some contractor submittals may include various pre-design documents and reports for remedial design investigation, the preliminary design, and the final design. Additionally, further refinement of the existing conceptual project schedule will be necessary due to review periods for the remedial design documents, among other things.

The documents discussed below are suggested to complete the remedial design at the KRY Site.

3.3.1.1 REMEDIAL DESIGN INVESTIGATION REPORT

A Remedial Design Investigation Report may include remedial design investigation and pilot study information previously discussed in Section 3.1.2. This report should include the results of the design investigation and pilot/treatability studies. The results of the data gap investigations and pilot studies may help further refine the site conceptual model and establish preliminary designs for each remedy component. The results may also assist the contractor to begin developing a concise scope of work prior to implementing the remedial action.

3.3.1.2 PRELIMINARY DESIGN REPORT

A Preliminary Design Report is considered complete when approximately 50 percent of the design work has been completed. The preliminary design phase is an active phase and requires close supervision and attention to details. Due to the logical progression of the engineering design process, certain preliminary design phase submittals include the results of the remedial design investigation. The preliminary design report may include design criteria, basis of design, preliminary plans and specifications, value engineering results, task-specific construction quality assurance plans (TCQAPs) for soil and groundwater remedies, best management practices (BMP), preliminary remedial action schedule, preliminary remedial action cost estimate, and a preliminary operation and maintenance (O&M) cost estimate.

3.3.1.3 FINAL DESIGN REPORT

The Final Design Report (FDR) should duplicate the contents of the preliminary design report incorporating revisions based on review comments. Some details of the report may include revised versions of the design criteria, basis of design, detailed plans and specifications, TCQAPs, O&M Manual, remedial action solicitation package, remedial

action schedule, and an engineer's cost estimate. Copies of permit applications and access requirements should be included as part of the report.

3.3.2 REMEDIAL ACTION WORK PLANS

Risk management and contingency plans should be considered as part of the remedial action work plan development process. The work plans may also include general project issues such as health and safety, utility clearance, site security, land surveying, and coordinating with existing site operations. Each work plan must include a table explaining compliance with the applicable ERCLs for that activity. Based on the information gathered during the remedial design phase, the following, and potential additional, implementation work plans may be required as part of the remedial action.

3.3.2.1 SOIL REMEDY WORK PLANS

Soil remedy work plans may be combined into one document or developed individually for ease of phased implementation. Soil remedy work plans may include the following:

- Soil Stockpile Area Construction Work Plan: The work plan for the soil stockpile area construction may include items such as a grading plan, liner and leachate collection system installation for the PCP soil stockpile (and possibly the other contaminated soil stockpiles), stockpile locations, equipment routing, haul road construction and maintenance, stormwater control, and dust control, as well as the general project issues listed above. The soil stockpile area must be adequately sized to handle the volume of soil that must be excavated and stockpiled before placement in an LTU or the dioxin/furan repository. The work plan needs to address the RCRA requirements for stockpiles, including the use of RCRA staging piles for PCP-contaminated soil and requirements for immediate action for hazardous waste releases. The work plan should also include information on decommissioning the stockpile area when LTU and dioxin/furan repository construction are complete, including grading and reclamation.
- Soil Excavation Work Plan: The soil excavation work plan may include items such as excavation procedures, segregation procedures for soils with different contaminants, ambient air monitoring using instruments such as photoionization detectors (PIDs) or lower explosive limit (LEL) monitors, dust control, personnel and equipment decontamination, confirmation sampling procedures and frequency, utility location and protection, sloping/shoring/benching of excavation walls (if necessary), and procedures for excavation near the rail lines. The work plan should address sludge excavation, handling, and transportation. Also the work plan should include information on the viscous LNAPL excavation and handling, and handling of saturated soils from the top of the

water table, including potential dewatering. The work plan should include procedures to properly abandon monitoring or ozone sparge wells within the excavation area.

- Lead Stabilization and Disposal Work Plan: The lead stabilization and disposal work plan may include details on stabilization additives and application techniques, handling of lead-contaminated soil co-located with PCP- and/or hydrocarbon-contaminated soil, and dust suppression. The work plan may also address transportation and disposal of the lead-contaminated soil.

- Rail Line Removal/Construction Work Plan: This work plan will address the work necessary to remove the rail lines prior to contaminated soil excavation, and replace them following backfill. It may include the procedure for obtaining access from Watco Companies, coordination with Mission Mountain Railroad and BNSF, safety concerns working around the rail line, removal procedures, and construction specifications. The construction specifications will likely include details on compaction, preparing the railroad subgrade, installing ballast, installing ties, installing track, and reopening the line to operation.

- Building Demolition Work Plan: This work plan will address the demolition work needed to remove the dilapidated storage shacks and ozonation system buildings on the western portion of the site that are within the excavation area. The work plan will include tasks such as contacting the Montana State Historic Preservation Office (SHPO) to confirm that the buildings are not protected by preservation law, performing lead and asbestos surveys and/or sampling to identify materials containing lead or asbestos, and demolition and disposal/recycling of the building materials. The ozonation system or components of it may be reusable on this or other sites.

- LTU Construction Work Plan: The LTU construction work plan may include information on the backfill, compaction, and grading of the excavation where the LTUs will be placed. It may include details on the liner installation, leachate collection system installation, berms, irrigation system installation (if necessary), access road(s), fencing, soil placement in the LTU, and other construction details. It may include details on testing the integrity of the liner system. The LTU construction work plan must discuss compliance with RCRA requirements for the PCP LTU.

- Dioxin/furan Soil Repository Construction Work Plan: The dioxin/furan soil repository construction work plan will include details on the grading and compaction of the area where the repository will be placed, preparation of the sub-repository soil, placement of the dioxin/furan-contaminated soil, compaction of the contaminated soil (if the repository area could be used for construction), and dust control. In addition, the cap material selection process may be addressed, including testing on the soil properties of the cap, and testing of the cap once it has been placed. Final grading and vegetation of the cap should be addressed.

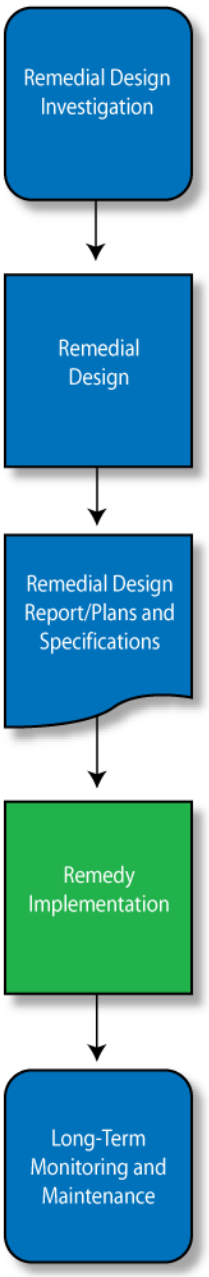
- Monitoring Well Installation Work Plan: Monitoring wells will likely be installed following implementation of the soil remedy, as some existing monitoring wells will likely be abandoned as they will conflict with the excavation. The monitoring well installation work plan may include descriptions of the monitoring well construction details, locations, drilling methods, soil sampling (if necessary), and completion details.

- Oxidant Injection Work Plan: The oxidant injection work plan may include information on the oxidant(s) selected, the application method(s), spacing of injection points, injection areas, application rates, mixing instructions, and injection intervals. If an installed system (e.g., ozone sparge) is chosen instead of liquid injections, the piping, enclosure designs, well and equipment locations, and other details would be included in the work plan. The work plan should include information on monitoring during the injections, and instructions for additional injection events, if necessary. The work plan should include contingency plans for drilling problems, injection problems, and other problems.

- Long-Term Monitoring Work Plan: The long-term monitoring plan should include details on the monitoring well network, sampling parameters, sampling frequency, monitoring of institutional controls, inspections of the dioxin/furan repository and the LTUs, and operational procedures for the LTUs. The LTU procedures should include information on determining adequate remediation of each lift of soil, sampling parameters and procedure, tilling procedures, nutrient and water application, leachate management, and dust and odor control. Monitoring of institutional controls may include searches of the DNRC database for new wells constructed within the controlled groundwater area, site inspections for restricted activities, public notification of restrictions for the area, and procedures for enforcement of the institutional controls if violations are found.

3.4 REMEDY IMPLEMENTATION

Effective remedy implementation includes proper planning, effective communication, proper coordination, proper monitoring during the action, a plan for waste management, and an understanding of regulatory requirements and permits. These components are described in more detail in the following subsections.



3.4.1 REMEDY IMPLEMENTATION

A flow chart showing potential order of remedial action implementation is presented as Figure 3-3. This flow chart shows activities that may be performed concurrently, as well as activities that must be completed before other activities may begin. Since many components of the remedies are related or take place in the same or nearby locations, it is important to adequately plan the implementation of the remedies in advance, to avoid unnecessary costs and duration of remediation. Figure 3-3 shows one possible scenario for implementation of the remedy, but developing a more detailed approach that is implementable in the field requires consideration of other field conditions that may not be currently known. Figure 3-4 shows possible locations for the hydrocarbon LTU, the PCP LTU, and the dioxin/furan soil repository.

3.4.1.1 INSTITUTIONAL CONTROLS IMPLEMENTATION

DEQ will petition DNRC to establish a controlled groundwater area for the KRY Site, and will submit required supporting information. The proposed controlled groundwater area will prevent DNRC from issuing well construction permits for wells to be used for purposes other than groundwater monitoring or remediation. DEQ will also establish restrictive covenants on properties that are not suitable for unrestricted use. This will include restrictions on access and disturbance of remedy components such as LTUs. Covenants may also prohibit residential use, groundwater use, and may restrict construction on certain portions of the site following soil remedy completion (e.g., covenants may allow slab-on-grade construction on the dioxin/furan repository, but prohibit excavation into the cap). Covenants will be filed with the Flathead County Clerk and Recorder.

3.4.2 REMEDIAL ACTION COMMUNICATIONS

Communication between DEQ, implementing entity, consultants/contractors performing the remedies, the public, and other affected parties will be important. Types of communication that should be planned for are discussed below.

Communication with DEQ – the implementing entity must communicate with DEQ to ensure remedial actions meet the requirements of CECRA and the ROD and to allow DEQ to communicate with the public.

Meetings with Affected Parties – meetings with affected parties (e.g., landowners/operators, utilities) should be scheduled in advance of the remedial action, as discussed in Section 3.2.3, Remedial Action Coordination Requirements. Communication with these parties will likely make the remedial action easier, and reduce conflicts with the affected parties.

Construction Reports – weekly construction memos should be submitted by the construction contractor or oversight consultant to the implementing entity. These memos should summarize the work performed during the previous week, including items such as the quantity and contamination type of soil moved, components of the remedy completed (e.g., lead-contaminated soil excavation and disposal complete), and quantity of oxidant applied.

Contractor/Consultant Progress Reports – monthly reports should be prepared during the remedial action. These should include a summary of the activities during the month, problems encountered and solutions, budget status, and anticipated activities for the next month. During construction the monthly reports should also summarize the weekly construction memos.

Long-Term Monitoring Reports – reports should be prepared by the consultant responsible for LTM. The frequency will depend on the monitoring frequency and quantity of data, but at least at first the report should likely be submitted on a quarterly basis. The reports will contain the data collected during the report period, analysis of the data, progress of LTU operations, and recommendations.

Communication with the Public – DEQ should keep the public informed about site activities by holding public meetings as well as issuing press releases, fact sheets, and post cards summarizing site activities. DEQ should continue to update the public as stated in Section 3 of the ROD. Meetings should be held when necessary, but likely during the design phase and prior to implementation of the remedies.

3.4.3 REMEDIAL ACTION COORDINATION

The flow chart shown on Figure 3-3 includes coordination tasks associated with remedial actions, and a general timeframe for coordination tasks to be performed. Coordination with interested parties, affected landowners/lessees, and local governments will be critical to the success of the remedial action, and has the potential to reduce project costs through increased efficiencies. Discussion of the coordination required with each group is included in the following sections.

3.4.3.1 AFFECTED LANDOWNERS/LESSEES AND UTILITIES

Affected landowners and lessees include Glacier Stone Supply, Klingler Lumber, Northwestern Energy, Mission Mountain Railroad, BNSF, DNRC, Swank Enterprises, OfficeMax, Pacific Steel and Recycling, and the Evergreen Water and Sewer District. Each of these entities will be affected in some way by the remedial action.

Glacier Stone operates on the properties owned by Stillwater Forest Products Inc., Montana Mokko Inc., and BNSF, located on the northwest portion of the KRY Site. Glacier Stone operations may be impacted by the Remedial Design Investigation of sawdust (methane production and metals in groundwater) and surface dioxin/furan contamination. The Remedial Design Investigation may include the area under the waste stone pile. Investigation may be performed most effectively by giving Glacier Stone adequate notice of when and where the investigation will be, and allowing them to process the stone in that area to expose the ground surface. If a remedy such as excavation is required in this area additional access will be required, likely to a larger area than during the investigation.

Klingler Lumber Company Inc. operates on property it owns as well as property it leases from BNSF on the western portion of the site. Surface and subsurface contamination may extend into the area, and it may be required that Klingler Lumber move logs or processed poles from the area to be excavated. In addition, Klingler's use of the rail spur will be disrupted during much of the soil remedy implementation. Klingler may be able to load poles on the Pacific Steel and Recycling rail spur until the other rail spur is replaced.

Northwestern Energy operates a natural gas pipeline through the eastern portion of the Site near BNSF's main rail line. The most effective and safest method of working around the pipeline appears to be relocation of the line to the west side of Flathead Drive following remedial excavation in/adjacent to Flathead Drive. In addition, there is a distribution line to residences on Flathead Drive already adjacent to Flathead Drive. Northwestern Energy personnel or approved contractors must perform excavation work within 15 feet of the gas lines. Relocating the gas lines near each other will simplify the excavation in the eastern portion of the Site.

Evergreen Water and Sewer District operates a water line that supplies residences on Flathead Drive. The water line may need to be temporarily removed for excavation in/adjacent to Flathead Drive, and replaced. The water line should be replaced far enough away from the gas lines (>15 feet) so that Northwestern Energy personnel or contractors are not required for water line excavation in the future. The likely location for the water line will be on the east side of Flathead Drive, near its current position.

Significant cleanup work must occur on the property owned by BNSF, which includes the significant portion of the property on the western portion of the site as well as the property underlying the spur line through the site and the main rail line on the northern portion of the site. Notification and coordination of activities will be needed with BNSF prior to investigation, excavation, and LTU construction.

BNSF's main rail line is operated by Mission Mountain Railroad, which is owned by Watco Companies. Based on data collected during the RI, contamination extends under the main line for much of the distance on the eastern portion of the site. The remedy includes removing the rail line temporarily to excavate under and near it. Based on conversations with Mission Mountain Railroad, the best time to interrupt service is during the summer, prior to harvest. The rail service could be interrupted for up to a week. Mission Mountain Railroad should be contacted 1-2 months in advance of the excavation. An Environmental Access Application must also be submitted 60 days prior to work within the railroad right-of-way and approved by the Watco Property Manager.

In addition to the mainline, the spur line that serves Klingler Lumber will be removed for most of its length. Coordination will be required with BNSF, Mission Mountain Railroad, and Watco Companies regarding removal and replacement of the spur line.

DNRC owns a portion of the site. Notification and coordination of activities will be needed with DNRC prior to investigation, excavation, and LTU construction.

Swank Enterprises owns the land north of the spur line and south of Flathead Drive. The land is used as a storage area for construction materials and equipment. Portions of this area will be excavated as part of the remedy. Swank Enterprises will need at least one month's notice to move materials and equipment out of the excavation area.

Portions of the groundwater remedy (i.e., chemical oxidation) will occur on the OfficeMax property, owned by Kalispell Partners LLC. Coordination with OfficeMax management and Kalispell Partners LLC will be required to limit the impacts to customers and employees at OfficeMax, and maintain safe working conditions for the contractor.

Based on RI data collected from the Pacific Steel and Recycling property, contamination associated with the KRY Site does not appear to impact the Pacific Steel and Recycling property above the groundwater table. However, Pacific Steel and Recycling may be impacted by disruptions in rail service. Therefore coordination is needed with Pacific Steel and Recycling to make them aware of the potential rail service disruptions.

3.4.3.2 LOCAL GOVERNMENTS

Coordination with the City of Kalispell and Flathead County will help the project proceed. Flathead County maintains Flathead Drive, and will need to be consulted in the closure of Flathead Drive necessary for some of the remediation,

and rerouting of traffic to the residences on Flathead Drive. In addition, the City of Kalispell and Flathead County will have interest in site redevelopment (when possible) and ongoing remedial actions.

3.4.3.3 OTHER INTERESTED PARTIES

Other interested parties include home owners and residents who live on Flathead Drive, politicians, emergency response services, and other businesses in the area that may be affected by construction traffic. Flathead Drive residents will need alternative ways of accessing their homes during remedial activities on and near Flathead Drive.

3.4.4 REMEDIAL ACTION MONITORING

3.4.4.1 AIR MONITORING

Air monitoring will likely be required during soil excavation, LTU construction, and initially during LTU operation. Monitoring will likely focus on the air site workers are exposed to as well as ambient air in the area of the site. Monitoring will likely consist of ambient air monitoring with a photoionization detector (PID), confirmed with some air samples submitted to an analytical laboratory. Air samples may be collected both in areas where site workers are exposed to potentially contaminated air and near the site boundaries. If air emission limits are placed on the LTU operations, air samples should be collected and analyzed. If LTU operations exceed allowed limits, modifications to operations will need to be implemented. These might include increased irrigation during hot days, thinner lifts, or less frequent tilling of soil.

3.4.4.2 GROUNDWATER MONITORING

Groundwater monitoring should be implemented following the soil remedy, and will be most important following implementation of the groundwater remedy. Groundwater monitoring will have several components:

- Confirmation of natural attenuation for metals and hydrocarbons
- Evaluation of oxidation for PCP and dioxin/furan
- Evaluation of free-phase hydrocarbon thickness

Groundwater monitoring will be implemented according to the LTM plan, which should be developed during the design phase. Frequency, analytes, and wells monitored should be evaluated periodically and adjusted to optimize monitoring based on reductions in contaminant concentrations or areas of impacts.

3.4.4.3 SOIL MONITORING

Soil monitoring will be performed during the soil remedy, including sludge removal, primarily as confirmation sampling. Confirmation sampling should be performed after excavation to confirm that remaining contamination is below cleanup levels. The frequency, location, and procedure for sample collection will be contained in the Soil Remedy Work Plan and the Soil Remedy TCQAP. Soil monitoring for off-site disposal may also be performed. This will primarily be performed for the lead-contaminated soil, and will likely be performed after stabilization, if required. Long-term monitoring of soil in the LTUs will be required. This monitoring should be performed to determine if each lift has reached cleanup levels. Monitoring will depend on the ultimate use/disposal of the soil. Soil from the PCP LTU will also be monitored for dioxin/furan, and if PCP limits are met but not dioxin/furan, the soil will be added to the dioxin/furan repository.

3.4.5 WASTE MANAGEMENT

Several types of waste will be generated during the remedial design investigation and the remedial action. Wastes include impacted water from decontamination, impacted soil from drilling and other investigation activities, lead-contaminated soil to be disposed of off-site (likely with stabilization), sludge and sludge-covered debris, LNAPL, building debris, and disposable field equipment/supplies.

F032 waste (containing PCP) may not be disposed of in a non-hazardous waste landfill unless it meets the universal treatment standard (Table 3-1). Therefore, soil and other solid material contaminated with PCP will likely need to be stored until it can be placed in the PCP LTU, decontaminated until it meets the universal treatment standard for placement in a landfill, disposed of at RCRA Subtitle C facility, or destroyed by incineration or other approved technique. The likely disposal technique for LNAPL containing PCP is disposal at an approved RCRA facility. Disposable field equipment/supplies can likely be decontaminated enough to meet the universal treatment standard, if decontamination is necessary.

Lead-contaminated soil will be tested using the TCLP and lead analysis of the leachate. Existing data for lead-contaminated soil indicates that some lead concentrations exceed the 20-times rule (i.e., the lead concentration is greater than 20 times the TCLP limit for non-hazardous waste, and must therefore be tested using the TCLP to determine if the soil will be considered a hazardous waste). Therefore, stabilization of some of the lead-contaminated soil will likely be required prior to disposal. Stabilized soil will then be sampled and submitted for TCLP and lead analysis, and if the results are below the hazardous waste limit the soil may be disposed of in a non-hazardous waste landfill.

Sludge will be disposed of or recycled at an asphalt batch plant. Sludge-covered debris may be incinerated in an off-site facility or disposed of in a non-hazardous waste landfill, depending on the debris material and whether the sludge is liquid.

Waste generated during the demolition of dilapidated storage buildings onsite may need to be sampled for lead and asbestos, depending on the age and construction of the buildings. Waste will then be disposed of in accordance with applicable laws and regulations.

3.4.6 REMEDIAL ACTION OVERSIGHT AND REGULATORY REQUIREMENTS

3.4.6.1 OVERSIGHT

DEQ will perform review and oversight of the remedial action and design activities performed as required by the ROD, either in person or using a consultant.

3.4.6.2 PERMITS AND OTHER REQUIREMENTS

Regulatory permits and associated requirements will be largely dependent on the final design and implementation strategies of the remedial actions to be implemented at the site. While this section attempts to identify key permits and regulatory requirements in order to enhance design and implementation coordination, this section is not intended to be an exhaustive listing of required permits nor include all possible local permit requirements. It is the responsibility of the implementing entity to identify applicable regulatory and permit requirements based on the final design and implementation methods to ensure compliance. Additional state and federal regulations which are applicable or relevant are listed in the ERCL table contained in Appendix A.

3.4.6.3 STORM WATER DISCHARGE PERMITS

The Federal Clean Water Act requires that discharges of any pollutant to United States waters be authorized by a National Pollutant Discharge Eliminations System (NPDES) permit. DEQ administers this program for the State of Montana thought the Montana Pollution Discharge Elimination System (MPDES) Program. Under this program, construction and other land disturbance activities of one acre or greater are required to obtain permit coverage under the General Permit for Storm Water Discharges Associated with Construction Activities, referred to as the General Permit. Land disturbance activities of less than one acre may also be required to obtain coverage under the General Permit if the activity is part of a “larger common plan of development or sale.”

Land disturbance activities specified in the ROD including excavation of contaminated soils and the soil repository and LTU construction will most likely require coverage under the MPDES General Permit. As part of obtaining permit coverage, the implementing entity will be required to submit a Storm Water Pollution Prevention Plan (SWPPP), which should include BMPs to prevent discharges of contaminants and/or sediment to adjacent surface waters. Two particular areas of concern during the construction activities at the Site will likely be dust control and storm water runoff from disturbed areas. The SWPPP should include appropriate measures to prevent the spread of contaminants during the disturbance activities and provide final stabilization and reclamation of the disturbed areas.

3.4.6.4 AIR EMISSIONS PERMIT

Based on initial communications with DEQ, an air emission permit should not be required. Although an air emissions permit may not be required, remedial activities performed at the KRY Site should not cause an exceedance of ambient air standards. Emissions of particular concern include settle particulate matter and PM-10 during soil disturbance activities and lead emissions during the excavation and stabilization activities of the lead-contaminated soils. Design of the implementation methods should include BMPs to prevent emissions during remedial implementation and a detailed monitoring and testing program to both ensure compliance with ambient air emission standards and protect worker health and safety. The Clean Air Act provides limitations for carbon monoxide, hydrogen sulfide, nitrogen dioxide, sulfur dioxide, and ozone, but significant discharges of these compounds are not expected based on the selected alternative described in the ROD. If ozone is the oxidant selected for the chemical oxidation system, monitoring of ambient air may be needed.

3.4.6.5 HAZARD WASTE PERMITS

The Montana Hazardous Waste Act incorporates federal regulations 40 CFR Part 270, which establishes a permit program for generators and transporters of hazardous waste, and owners or operators of hazardous waste treatment, storage, or disposal facilities. Additional hazardous waste regulatory requirements will also apply to the remedial actions involving the generation, transportation, treatment, or disposal of hazardous wastes. Additional state and federal regulations that may be applicable are listed in the ERCL table contained in Appendix A.

3.4.6.6 UNDERGROUND INJECTION PERMITS

The selected remedial alternatives contained in the ROD include treatment utilizing in-situ chemical oxidation to reduce groundwater contaminant concentrations. The EPA Underground Injections Control (UIC) Program set forth by 40 CFR 144 and 146 establishes standards and criteria for the injection of substances into subsurface. Aquifer

remediation injections are classified as Class V injections wells. Under the existing regulations, Class V injections wells are "authorized by rule" and do not require a permit if they do not endanger underground source of drinking water and comply with other UIC program requirements. These additional requirements include submitting basic information about the Class V injection well to the EPA and constructing, operating and closing the injection well in a manner which protects underground sources of drinking water.

3.4.6.7 RAILROAD ACCESS

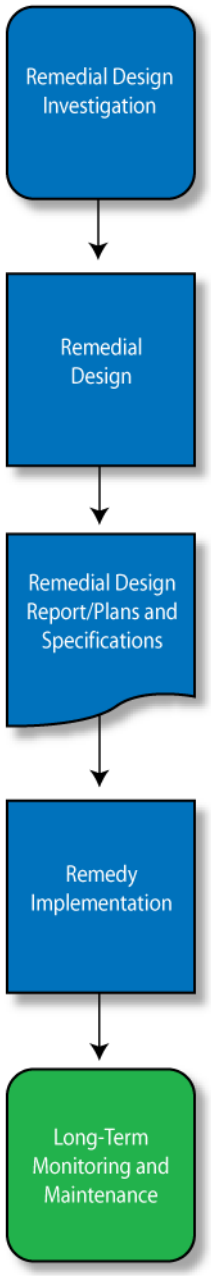
An Environmental Access Application from Watco Companies must be completed to perform subsurface investigations or excavations within 15 feet of the railroad main line. The application must be submitted 60 days prior to work (Watco Companies, 2009).

3.4.7 REMEDIAL DESIGN/REMEDIAL ACTION SCHEDULE

A preliminary schedule for the remedial design and the remedial action is included as Figure 3-5. This schedule includes key components such as remedial design and remedial action deliverables, major coordination tasks, and remedial action tasks. The remedial action components of the schedule in particular are not definite, and could be altered significantly. Similarly, the duration of the remedial action is preliminary; the actual duration of the remedial action will depend on the contractor's capabilities, weather, unforeseen events, and other variables.

3.5 LONG-TERM MONITORING AND MAINTENANCE

Long-term monitoring and maintenance will likely consist of monitoring of institutional controls, LTU operations, monitoring of groundwater contaminant concentrations including MNA parameters, and inspections and maintenance of systems such as the dioxin/furan cap, leachate collection systems, LTU liners, and other components. Long-term monitoring will be performed according to the LTM Plan, to be developed during the remedial design. Groundwater monitoring will likely focus on verification of MNA for metals and petroleum, monitoring PCP and dioxin/furan concentrations, and monitoring to achieve closure for portions or all of the site.



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TABLES

TABLE 2-1. GROUNDWATER CLEANUP LEVELS
KRY SITE, KALISPELL, MONTANA

		Rationale for Cleanup Level Selection			
Contaminant of Concern	**Cleanup Level (ug/L)**	**Background**	**DEQ-7 Standard**	**RBCA RBSL**	**Tap Water SL**
1,2,4-Trimethylbenzene	15				X
Arsenic	10		X		
Benzene	5		X	X	
C11-C22 Aromatics	1000			X	
C5-C8 Aliphatics	800			X	
C9-C10 Aromatics	1000			X	
C9-C12 Aliphatics	500			X	
Dioxins/furans (TEQ - WHO 1998)	5.61 pg/L	X			
Ethylbenzene	700		X	X	
Iron	300		X		
Manganese	778	X			
Naphthalene	100		X	X	
Pentachlorophenol	1		X		
Toluene	1000		X	X	
Free-product	1/8 inch*				

ug/L - microgram per liter (parts per billion).
pg/L - picograms per liter (parts per quadrillion).
* - 40 CFR 280.64 and ARM 17.56.607 require removal of free-product to the maximum extent practicable; determined by DEQ to be 1/8 inch or less. See Section 12.0 of the ROD for more information.
This table is modified from Table 4 of the ROD (DEQ 2008b).

TABLE 2-2. SOIL CLEANUP LEVELS
KRY SITE, KALISPELL, MONTANA

Contaminant of Concern	Surface Soil Commercial/Industrial Cleanup Level (mg/kg)	Surface Soil Residential Cleanup Level (ng/kg)[f]	Subsurface Soil Construction/Excavation Cleanup Level (mg/kg)
1,2,4-Trimethylbenzene	NA	NA	**25**
Acenaphthene	NA	NA	**27,000**
Arsenic	40[a]	NA	40[a]
Benz(a)anthracene	[b]	NA	[g]
Benzo(a)pyrene	[b]	NA	[g]
Benzo(b)fluoranthene	[b]	NA	NA
C11-C22 Aromatics	33,445[*]	NA	33,445
C19-C36 Aliphatics	NA	NA	260,154
C5-C8 Aliphatics	NA	NA	730
C9-C10 Aromatics	NA	NA	**4,800**
C9-C12 Aliphatics	NA	NA	1,550
C9-C18 Aliphatics	2,634[*]	NA	2,634
Carbazole	NA	NA	**99**
Chromium	**150**	NA	**20**
Dibenzo(a,h)anthracene	[b]	NA	NA
Dioxins/furans (TEQ - 2005)	103 ng/kg	62.5	850 ng/kg
Ethylbenzene	NA	NA	**320**
Fluorene	NA	NA	**130,000**
Indeno(1,2,3-cd)pyrene	[b]	NA	NA
Iron	NA	NA	46,686
Lead	800[c]	NA	800[c]
Methylene Chloride	**0.82**	NA	NA
2-Methylnaphthalene	NA	NA	1,982
Naphthalene	NA	NA	**220**
Pentachlorophenol	**12**[d]	NA	**0.43**
Selenium	NA	NA	**1.7**
Sludge	Visible[e]	NA	Visible[e]
Toluene	NA	NA	**260**
Xylenes	NA	NA	486

mg/kg - milligrams per kilogram (parts per million).
ng/kg - nanograms per kilogram (parts per trillion).
Cleanup levels in **bold** are based on leaching to groundwater (assumes contamination only in the surface soil with clean subsurface soils).

[*] - Cleanup levels are based on excavation because that pathway is more protective.
[a] - DEQ Action Level from DEQ's April 2005 Arsenic Position Paper.
[b] - Total cPAH cleanup level is 1.7 mg/kg (determined using the approach outlined in EPA,1993). cPAHs include benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene for surface soils. See Risk Analysis for more information.
[c] - EPA Region 9 Industrial Preliminary Remediation Goal.
[d] - Cleanup level unless subsurface soil is contaminated in same area, then it is 0.43 mg/kg (the excavation leaching to groundwater level - see * above), unless the SPLP option is chosen for use in place of the leaching to groundwater cleanup levels. If that option is chosen, the SPLP result would be compared to the groundwater cleanup level multiplied by the site-specific DAF of 30.
[e] - 40 CFR 280.64 and ARM 17.56.607 require removal of free product to the maximum extent practicable. For sludge, this is based on visual observation.
[f] - Dioxins/furans were the only COC for residential soil.
[g] - Total cPAH cleanup level is 13 mg/kg (determined using the approach outlined in EPA, 1993). cPAHs include benzo(a)anthracene and benzo(a)pyrene for subsurface soils. See Risk Analysis for more information.
NA - Not applicable.
This table is modified from Table 5 of the ROD (DEQ 2008b).

TABLE 3-1. UNIVERSAL TREATMENT STANDARDS FOR PENTACHLOROPHENOL
KRY SITE, KALISPELL, MONTANA

Contaminant	Wastewater (mg/L)	Non-Wastewater (mg/kg)
Pentachlorophenol	0.089	7.4

APPENDIX A

TABLE OF ENVIRONMENTAL REQUIREMENTS, CRITERIA, AND LIMITATIONS

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
CONTAMINANT SPECIFIC REQUIREMENTS		
Groundwater		
40 Code of Federal Regulations (CFR) 141 40 CFR 143.3	Maximum Contaminant Levels and Maximum Contaminant Level Goals (Relevant) Because the groundwater in the area near the site is currently and has been used as a drinking water source, the MCLs and non-zero MCLGs specified in 40 CFR Part 141 (Primary Drinking Water Standards) are identified. The Evergreen Water and Sewer District operates two wells located northeast of the site. In addition, there are numerous commercial, industrial, and residential wells on or near the site that use the groundwater. Secondary Maximum Contaminant Levels (Relevant) Because the groundwater in the area near the site is currently and has been used as a drinking water source, the Secondary Maximum Contaminant Levels (SMCLs) specified in 40 CFR Part 143.3 are relevant requirements which are ultimately to be attained by the remedy for the site. 40 CFR 143.3 contains standards for iron, manganese, color, odor, and corrosivity which are relevant to the remedial action.	The cleanup levels at the KRY Site are based on Montana numeric water quality standards, MCLs or other applicable groundwater quality regulations. Source materials identified during site investigations, such as free product and contaminated soils, will be removed. Wastes generated during the remedial activities will be stored and treated or disposed of in such a manner as to not re-impact groundwater quality. Soil treated in onsite LTUs will be equipped with liners and leachate collection systems to prevent recontamination of the groundwater. Leachate collected at the LTUs will be reapplied to the soil within the LTU as part of the bioremediation process. Excess leachate or groundwater collected during sampling or free product recovery activities will be disposed. Free product, contaminated soils and other contaminated media will be treated, recycled or disposed of in accordance with solid and hazardous waste ERCLs in a manner that does not degrade the aquifer. In addition, the remedy provides for active treatment of the groundwater through chemical oxidation followed by monitored natural attenuation which will ensure that cleanup levels are met. Nearby drinking water wells will be monitored and if exceedances occur, alternate water will be provided.
Section 75-5-605, Montana Code Annotated (MCA) Section 75-5-303, MCA	Causing of Pollution Section 75-5-605 of the Montana Water Quality Act (Applicable) prohibits the causing of pollution of any state waters. Section 75-6-112, MCA (Applicable) provides that it is unlawful to discharge drainage or other waste that will cause pollution of state waters used as a source for a public water supply or for domestic use as well as prohibits other unlawful actions. Placement of Wastes Section 75-5-605, MCA (Applicable) also states that it is unlawful to place or cause to be placed any wastes where they will cause pollution of any state waters. Nondegradation Section 75-5-303, MCA (Applicable) states that existing uses of state waters and the level of water quality necessary to protect the uses must be maintained and protected, with certain limited exceptions.	To prevent state waters from degradation/pollution, wastes generated during the remedial activities will be stored and treated or disposed of in such a manner as to not re-impact groundwater quality. Soil treated in onsite LTUs will be equipped with liners and leachate collection systems to prevent recontamination of the groundwater. Leachate collected at the LTUs will be reapplied to the soil within the LTU as part of the bioremediation process. Excess leachate or groundwater collected during sampling or free product recovery activities will be disposed. Free product and other contaminated media will be treated, recycled or disposed of in accordance with solid and hazardous waste ERCLs in a manner that does not degrade water quality. In addition, the remedy provides for active treatment of the groundwater through chemical oxidation followed by monitored natural attenuation which will ensure that cleanup levels are met. The spill response plan will address releases that may occur during implementation of the remedy.
Administrative Rules of Montana (ARM) 17.30.1006 ARM 17.30.1011	Montana Groundwater Pollution Control System (Applicable) ARM 17.30.1006 (Applicable) classifies groundwater into Classes I through IV based upon its specific conductance and establishes the groundwater quality standards applicable with respect to each groundwater classification. Based upon its specific conductance, the groundwater at the site must meet the standards for Class I groundwater. These standards are applicable. Concentrations of substances in Class I may not exceed the human health standards for groundwater listed in Circular DEQ-7, Montana Numeric Water Quality Standards, February 2006. In addition, no increase of a parameter may cause a violation of Section 75-5-303, MCA (Applicable). For the primary contaminants of concern, the Circular DEQ-7 standards and MCLs are listed below. All levels are given in µg/l unless noted. Arsenic: 10, Benzene: 5, Dioxin/furans: 0.000002 (background of 5.61 pg/L is the cleanup level), Ethyl benzene: 700, Iron: 300, Manganese: 50 (background leel of 778 is the cleanup level), Naphthalene: 100, Pentachlorophenol: 1, Toluene: 1000. For concentrations of parameters for which human health standards are not listed in DEQ-7, ARM 17.30.1006 allows no increase of a parameter to a level that renders the waters harmful, detrimental or injurious to the beneficial uses listed for Class I water. ARM 17.30.1011 (Applicable) provides that any groundwater whose existing quality is higher than the standard for its classification must be maintained at that high quality in accordance with Section 75-5-303, MCA, and ARM Title 17, chapter 30, subchapter 7.	The cleanup levels at the KRY Site are based on Montana numeric water quality standards, MCLs or other applicable groundwater quality regulations. Source materials indentified during site investigations, such as free product and contaminated soils, will be removed. Wastes generated during the remedial activities will be stored and treated or disposed of in such a manner as to not re-impact groundwater quality. Soil treated in onsite LTUs will be equipped with liners and leachate collection systems to prevent recontamination of the groundwater. Leachate collected at the LTUs will be reapplied to the soil within the LTU as part of the bioremediation process. Excess leachate or groundwater collected during sampling or free product recovery activities will be disposed. Free product, contaminated soils and other contaminated media will be treated, recycled or disposed of in accordance with solid and hazardous waste ERCLs in a manner that does not degrade the aquifer. In addition, the remedy provides for active treatment of the groundwater through chemical oxidation followed by monitored natural attenuation which will ensure that cleanup levels are met.

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
Surface Water		
Montana Water Quality Act, Section 75-5-101, et seq., MCA Federal Clean Water Act, 33 U.S.C. § 1251, et seq.	The Montana Water Quality Act, Sections 75-5-101 et seq., establishes requirements for restoring and maintaining the quality of surface and ground waters and the Federal Clean Water Act, 33 U.S.C. Sections 1251 et seq., establishes requirements for restoring and maintaining the quality of surface waters. Under these Acts the state has authority to adopt water quality standards designed to protect beneficial uses of each water body and to designate uses for each water body. Montana's regulations classify state waters according to quality, place restrictions on the discharge of pollutants to state waters and prohibit the degradation of state waters. Under the State Water Quality Act, 75-5-101, et seq., MCA, Montana has Promulgated regulations, ARM 17.30.601 et seq., (Applicable) to protect, maintain, and improve the quality of surface waters in the state.	To prevent state waters from further degradation, wastes generated during the remedial activities will be stored and treated or disposed of in such a manner as to not re-impact groundwater quality. Soil treated in onsite LTUs will be equipped with liners and leachate collections system to prevent recontamination of the surface or groundwater. Leachate collected at the LTUs will be reapplied to the soil within the LTU as part of the bioremediation process. Excess leachate or groundwater collected during sampling or free product recovery activities will be disposed. Free product, contaminated soil and other contaminated media will be treated, recycled or disposed of in accordance with solid and hazardous waste ERCLs in a manner that does not impact water quality.
ARM 17.30.608	Pursuant to the authority and criteria established by Montana surface water quality regulations, ARM 17.30.601, et seq., Montana has established the Water- Use Classification system. ARM 17.30.608 (Applicable) provides that the Stillwater River mainstream from Logan Creek to the Flathead River is classified as B-2. The Whitefish River from the outlet of Whitefish Lake to the Stillwater River is also classified as B-2. The Flathead River above Flathead Lake is classified as B-1.	A Storm Water Pollution Prevention Plan (SWPPP) or other implementation plan will be developed prior to implementation of the remedial actions. The SWPPP will specify procedures and best management practices (BMPs) to prevent impact of surface waters from site contaminants or sediment. The SWPPP will also include a dust control plan to prevent particles or contaminants from becoming airborne and impacting storm water or adjacent surface waters.
ARM 17.30.623	ARM 17.30.623 (Applicable) provides the classification standards and beneficial uses for the B-1 classification and provides that concentrations of carcinogenic, bioconcentrating, toxic, or harmful parameters that would remain in the water after conventional water treatment may not exceed DEQ-7 standards. The section also provides the specific water quality standards that must be met for B-1 classification. These standards include the following criteria: 1) Dissolved oxygen concentration must not be reduced below the levels given in DEQ-7; 2) Hydrogen ion concentration (pH) must be maintained within the range of 6.5 to 8.5 at less than 0.5 pH unit. Natural pH outside this range must b maintained without change and natural pH above 7.0 must be maintained; 3) the maximum allowable increase above naturally occurring turbidity is 5 nephelometric turbidity units, except as permitted by Section 75-5-318; 4) Temperature increases must be kept within prescribed limits; 5) No increase is allowed above naturally occurring concentrations of sediment, settleable solids, oils, or floating solids which will or is likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish or other wildlife. 6) True color must be kept within specified limits; 7) E-coli must be kept below specified limits.	
ARM 17.30.624	ARM 17.30.624 (Applicable) provides the classification standards and beneficial uses for the B-2 classification and provides that concentrations of carcinogenic, bioconcentrating, toxic, or harmful parameters that would remain in the water after conventional water treatment may not exceed DEQ-7 standards. The section also provides the specific water quality standards that must be met for B-2 classification. These standards include the following criteria: 1) Dissolved oxygen concentration must not be reduced below the levels given in DEQ-7; 2) Hydrogen ion concentration (pH) must be maintained within the range of 6.5 to 9.0 at less than 0.5 pH unit. Natural pH outside this range must b maintained without change and natural pH above 7.0 must be maintained; 3) the maximum allowable increase above naturally occurring turbidity is 10 nephelometric turbidity units, except as permitted by Section 75-5-318; 4) Temperature increases must be kept within prescribed limits; 5) No increase is allowed above naturally occurring concentrations of sediment, settleable solids, oils, or floating solids which will or is likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish or other wildlife. 6) True color must be kept within specified limits; 7) E-coli must be kept below specified limits.	
DEQ-7 standards	DEQ-7 provides that if both Aquatic Life Standards or the Human Health Standards for the same analyte exist, the more restrictive of these standards will be used as the applicable standard. For the primary Contaminant of Concern the DEQ-7 surface water standard is listed below. Dioxin/furans: 0.00000005 µg/l Creeks, rivers, ditches, and certain other bodies of surface water must meet these requirements as provided under ARM 17.30.602(33).	
ARM 17.30.637	ARM 17.30.637 (Applicable) requires state surface waters to be free from substances attributable to discharges that will: (1) settle to form objectionable sludge deposits or emulsions beneath the surface of the water or upon adjoining shorelines; (2) create floating debris, scum, a visible oil film (or be present in concentrations at or in excess of 10 milligrams per liter) or globules of grease or other floating materials; (3) produce odors, colors or other conditions which create a nuisance or render undesirable tastes to fish flesh or make fish inedible; (4) create concentrations or combinations of materials which are toxic or harmful to human, animal, plant or aquatic life; (5) create conditions which produce undesirable aquatic life. ARM 17.30.637 (Applicable) also states that no waste may be discharged and no activities conducted which, either alone or in combination with other waste activities, will cause violation of surface water quality standards.	
ARM 17.30.705	ARM 17.30.705 (Applicable) provides that for any surface water, existing and anticipated uses and the water quality necessary to protect these uses must be maintained and protected unless degradation is allowed under the nondegradation rules at ARM 17.30.708.	

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
Air Quality		
The Clean Air Act (42 USC §§ 7401 et seq.) Sections 75-2-101, et seq., MCA ARM 17.8.204 and 206 ARM 17.8.220	The Clean Air Act (42 USC §§ 7401 et seq.) provides limitations on air emissions resulting from cleanup activities or emissions resulting from with erosion of exposed hazardous substances. Sections 75-2-101, et seq., MCA (Applicable) provides that state emission standards are enforceable under the Montana Clean Air Act. ARM 17.8.204 and 206 (Applicable) establish monitoring, data collection, and analytical requirements to ensure compliance with ambient air quality standards and require compliance with the Montana Quality Assurance Project Plan. DEQ may determine more stringent requirements to be necessary. ARM 17.8.220. (Applicable) Settled particulate matter shall not exceed a 30 day average of 10 grams per square meter.	During the development of design documents, the implementing entity will confirm whether an air permit is needed. A SWPPP will be developed prior to implementation of the remedial actions. The SWPPP will include dust control measures to prevent particles or contaminants from becoming airborne and procedures for air monitoring to verify compliance with ambient air standards. Remedial actions will be halted if air monitoring indicates dust concentrations are approaching air quality limitations and will not resume until adequate dust control measures are in place. If ambient air monitoring is required, ARM 17.8.204 provides that such sampling and data collection must be performed as specified in the Montana Quality Assurance Project Plan, incorporated by reference in ARM 17.8.202, unless DEQ determines more stringent requirements are needed.
ARM 17.8.222	ARM 17.8.222 (Applicable) Lead in ambient air shall not exceed a 90 day average of 1.5 micrograms per cubic meter of air.	Activities proposed in the ROD include excavation of lead contaminated soil and possible onsite treatment or stabilization activities. During design of the implementation methods, BMPs to prevent emissions during remedial implementation and a detailed monitoring and testing program will be developed, including dust control measures to prevent particles or contaminants from becoming airborne and procedures for air monitoring to verify compliance with ambient air standards. Remedial actions will be halted if air monitoring indicates dust concentrations are approaching air quality limitations and will not resume until adequate dust control measures are in place.
ARM 17.8.210, 17.8.211, 17.8.212, 17.8.213, and 17.8.214	Ambient air standards for carbon monoxide, hydrogen sulfide, nitrogen dioxide, sulfur dioxide, and ozone. If emissions of these compounds occur at the site in connection with any remedial action, these standards would be applicable.	Activities proposed the ROD are not expected to result in exceedances of ambient air quality standards for carbon monoxide, hydrogen sulfide, nitrogen dioxide, sulfur dioxide, or ozone. If ozone is the oxidant selected for the chemical oxidation system, monitoring of ambient air may be needed.
ARM 17.8.223	ARM 17.8.223. (Applicable) PM-10 concentrations in the ambient air shall not exceed a 24 hour average of 150 micrograms/cubic meter of air and an annual average of 50 micrograms/cubic meter of air.	Activities proposed in the ROD include excavation, soil treatment and other land disturbance activities. A SWPPP will be developed prior to conducting active remediation. The SWPPP will include dust control measures to prevent particles or contaminants from becoming airborne and procedures for air monitoring to verify compliance with ambient air standards. Remedial actions will be halted if air monitoring indicates dust concentrations are approaching air quality limitations and will not resume until adequate dust control measures are in place.
LOCATION SPECIFIC REQUIREMENTS		
The Endangered Species Act (Relevant)		
16 U.S.C. § 1531 et seq., 50 CFR Part 402, 40 CFR 6.302(h), 40 CFR 257.3-2 Montana Nongame and Endangered Species Act, §§ 87-5-101 et seq. ARM 12.5.201	This statute and implementing regulations (16 U.S.C. § 1531 et seq., 50 CFR Part 402, 40 CFR 6.302(h), and 40 CFR 257.3-2) require that any federal activity or federally authorized activity may not jeopardize the continued existence of any threatened or endangered species or destroy or adversely modify a critical habitat. Compliance with this requirement involves consultation with the U.S. Fish and Wildlife Service (USFWS) and a determination of whether there are listed or proposed species or critical habitats present at the Site, and, if so, whether any proposed activities will impact such wildlife or habitat. No endangered or threatened species or critical habitat have been identified at the site and no federal actions or activities are anticipated. §§ 87-5-101 et seq. (Applicable) Endangered species should be protected in order to maintain and to the extent possible enhance their numbers. These sections list endangered species, prohibited acts and penalties. See also, § 87-5-201, MCA, (Applicable) concerning protection of wild birds, nests and eggs. ARM 12.5.201 (Applicable). Certain activities are prohibited with respect to specified endangered species.	No threatened or endangered species or critical habitat have been identified on the KRY Site. However, if threatened or endangered species or critical habitat are subsequently encountered during remedial actions, compliance with these ERCLs is required. If any threatened or endangered species are encountered during remedial actions, consultation with the USFWS will occur.
Migratory Bird Treaty Act (Relevant)		
16 U.S.C. § 703, et seq.	This requirement (16 U.S.C. § 703 et seq.) establishes a federal responsibility for the protection of the international migratory bird resource and requires continued consultation with the USFWS during remedial design and remedial action to ensure that the cleanup of the site does not unnecessarily impact migratory birds.	No international migratory bird resources have been identified on the KRY Site. However, if international migratory bird resources are subsequently encountered during remedial actions, consultation with the USFWS will occur.
Bald Eagle Protection Act (Relevant)		
16 U.S.C. § 668, et seq.	This requirement (16 U.S.C. § 668 et seq.) establishes a federal responsibility for protection of bald and golden eagles, and requires continued consultation with the USFWS during remedial design and remedial action to ensure that any cleanup of the site does not unnecessarily adversely affect the bald and golden eagle.	To date, bald and golden eagles have not been identified at the site. However, if bald or golden eagles are subsequently encountered during remedial actions, consultation with the USFWS will occur.
Historic Sites, Buildings, Objects, and Antiquities Act (Relevant)		
16 U.S.C. 461, et seq.	These requirements, found at 16 U.S.C. 461 et seq., provide that, in conducting an environmental review of a proposed action, the responsible official shall consider the existence and location of natural landmarks using information provided by the National Park Service pursuant to 36 CFR 62.6(d) to avoid undesirable impacts upon such landmarks.	No such landmarks are identified in the area. Therefore, no further actions are required to comply with this requirement.

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
Resource Conservation and Recovery Act (Relevant)		
40 CFR 264.18	This requirement (40 CFR 264.18) provides location standards for owners and operators of hazardous waste management units. Portions of new management units must not be located within 200 feet of a fault which has had displacement in Holocene time and management units in or near a 100 year floodplain must be designed, constructed, operated, and maintained to avoid washout.	Activities proposed in the ROD include construction of one hazardous waste land treatment unit (LTU). The site is not located within 200 feet of any know faults, but a small portion of the KRY Site is within the 100 year floodplain. The LTU will be located outside of the 100 year floodplain and will include design components that prevent washout.
Fish and Wildlife Coordination Act (Relevant)		
16 U.S.C. 661, et seq. and 40 CFR 6	These standards are found at 16 U.S.C. § 661 et seq. and 40 CFR 6 and require that federally funded or authorized projects ensure that any modification of any stream or other water body affected by a funded or authorized action provide for adequate protection of fish and wildlife resources.	There are surface waters adjacent to the KRY Site, however modification of the water body is not anticipated, and no further actions are required to comply with this requirement.
Floodplain Management Order (Relevant)		
40 CFR Part 6, Executive Order No. 11,988	40 CFR Part 6, Executive Order No. 11,988 (Relevant) requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. A portion of the site is in a floodplain.	A portion of the KRY Site is within a floodplain; however, no federal action is anticipated at the site. It is not anticipated that further actions are required to comply with this requirement. Application of the Montana floodplain requirements addresses protection of the floodplain.
Floodplain and Floodway Management Act and Regulations (Applicable)		
	A portion of the site is in a designated floodplain. The following standards are included here to indicate the restrictions on any related activities that might occur in or affect the floodway or floodplain.	Although a small portion of the site to the north and northwest is located within the floodplain, none of the tasks in the ROD are anticipated to impact the floodplain. Figure 1-1 shows the portion of the site located within the 100-year floodplain. If the sawdust investigation reveals that sawdust removal in this area is required, it will be designed in such a way as to ensure compliance with all floodplain requirements.
Section 76-5-401, MCA and ARM 36.15.601	Section 76-5-401, MCA and ARM 36.15.601 (Applicable) allows certain open-space residential, agricultural, industrial-commercial, recreational and other uses within the designated floodway, provided they do not require structures other than portable structures, fill or permanent storage of materials or equipment.	
ARM 36.15.701	ARM 36.15.701 (Applicable) allows certain activities in the flood fringe. Permitted and unpermitted uses allowed within the floodway are also allowed in the flood fringe providing minimum requirements for structures, fill, and roads.	
ARM 36.15.605(2) and 36.15.703	ARM 36.15.605(2) and 36.15.703 (Applicable) prohibit certain uses anywhere in either the floodway of the flood fringe. Prohibited obstructions include: a) a building for living purposes, b) a structure or excavation that will cause water to be diverted from designated flood way, c) construction or storage of any object subject to flotation or movement during flooding. Also, the following obstructions are prohibited in the designated floodway: a) mobile homes, b) commercial buildings, c) solid, hazardous, or sewage waste disposal, d) storage of toxic, flammable, hazardous, or explosive materials.	
Section 76-5-402, MCA	Section 76-5-402, MCA (Applicable) allows uses in the floodplain outside the flood way. Allows any use permitted in the designated floodway, as well as structures that meet minimum requirements for fill and floodproofing.	
Section 76-5-404, MCA	Section 76-5-404, MCA (Applicable) establishes that it is unlawful to alter an artificial obstruction or designated floodway without a permit. This section applies to any remedial action in the designated floodplain or designated floodway where such action requires more than maintenance.	
Section 76-5-406, MCA and ARM 36.15.216	Section 76-5-406, MCA and ARM 36.15.216 (Applicable) contain substantive factors which address obstruction or use within the floodway or floodplain. Factors that must be considered in addressing any obstruction or use within the floodway or floodplain include: the danger to life and property from backwater or diverted flow caused by the obstruction or use; the danger that the obstruction or use will be swept downstream to the injury of others; the availability of alternate locations; the construction or alteration of the obstruction or use in such a manner as to lessen the danger; the permanence of the obstruction or use; the anticipated development in the foreseeable future of the area.	
ARM 36.15.604	Further conditions or restrictions that generally apply to specific activities within the floodway or floodplain can be found at ARM 36.15.604 (Applicable). The proposed activity, construction, or use cannot increase the upstream elevation of the 100-year flood a significant amount, 0.5 of a foot or as otherwise determined by permit-issuing authority, or significantly increase flood velocities.	
	The following applicable regulations provide substantive conditions and restrictions applicable to specific obstructions or uses.	
ARM 36.15.602(1)	ARM 36.15.602(1) provides for excavation of material from pits or pools provided that: a) a buffer strip of undisturbed land of sufficient width to prevent flood flows from channeling into the excavation is left between the edge of the channel and the edge of the excavation, b) the excavation meets all applicable laws and regulations of other local and state agencies, c) excavated material is stockpiled outside the designated floodway	
ARM 36.15.602(5)(b)	ARM 36.15.602(5)(b) provides for storage of materials and equipment provided that the material or equipment is readily removable within the limited time available after flood warning. Storage of flammable, toxic, or explosive materials shall not be permitted	

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
ARM 36.15.603	ARM 36.15.603 provides for water diversions or changes in place of diversion. All new water diversions or changes in place of diversion require permits or approval as provided for in the Montana Water Use Act of 1973, sections 85-2-302 and 85-2-402, MCA.	
ARM 36.15.606	ARM 36.15.606 requires all flood control works (levees, floodwalls, and riprap) to comply with specified safety standards.	
ARM 36.15.701(3)(c)	ARM 36.15.701(3)(c) requires that roads, streets, highways and rail lines must be designed to minimize increases in flood heights.	
ARM 36.15.701(3)(d)	Structures and facilities for liquid or solid waste treatment and disposal must be floodproofed to ensure that no pollutants enter flood waters and may be allowed and approved only in accordance with DEQ regulations, which include certain additional prohibitions on such disposal. ARM 36.15.701(3)(d).	
ARM 36.15.702(1)(2)	ARM 36.15.702 (1)(2)provides for floodproofing of residential, commercial, and industrial structures through construction, substantial improvement, and alteration.	
Montana Natural Streambed and Land Preservation act and Regulations (Applicable)		
Section 75-7-101, et seq., MCA and ARM 36.2.401 et seq.	Section 75-7-101, et seq., MCA and ARM 36.2.401 et seq. (Applicable) apply if a remedial action alters or affects a streambed (including a river) or its banks.	It is not anticipated that the remedial action will alter or affect a streambed or stream banks.
ARM 36.2.410	ARM 36.2.410 (Applicable) establishes minimum standards and guidelines which would be applicable if a remedial action alters or affects a streambed, including any channel change, new diversion, riprap, or other stream bank protection project. See § 75-7-102,MCA.	
Section 75-7-111, MCA	Section 75-7-111, MCA (Applicable) provides that a person planning to engage in any activity that will physically alter or modify the bed or banks of a stream or river must give written notice to the Board of Supervisors of a Conservation District, the Directors of a Grass Conservation District, or the Board of County Commissioners if the proposed project is not within a district.	
Solid Waste Management Act and Regulations (Applicable)		
Solid Waste Management Act, Sections 75-10-201 et seq., MCA and ARM 17.50.501 et seq.	Regulations promulgated under the Solid Waste Management Act, Sections 75-10-201 et seq., MCA, (Applicable) and pursuant to the federal Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, 42 U.S.C §§ 6901 et seq. (RCRA Subtitle D), specify requirements that apply to the location of any solid waste management facility. At the site, these requirements specifically apply to the petroleum land treatment unit and the dioxin/furan repository described in the Record of Decision.	There are two LTUs and a soil repository selected in the Record of Decision. One LTU will be utilized for treatment of PCP contaminated soil (F032 listed hazardous waste) and is regulated under separate hazardous waste regulations. The second LTU will be utilized for treatment of non-hazardous petroleum contaminated soil and the soil repository will be used for disposal of dioxins/furans only contaminated soils; both are regulated under these solid waste management regulations. Other non-hazardous wastes generated during implementation of the ROD will be placed in the appropriate container and temporarily stored in a centralized storage area pending characterization and final disposition. Non-hazardous waste will be reused to the maximum extent practicable. Non-hazardous solid waste that cannot be reused will be disposed offsite at the appropriate disposal facility. Other solid waste (i.e., plastic wrapping, cardboard, etc.) will be contained in a plastic bag (if necessary), double-bagged (if necessary), and placed in a waste disposal dumpster for collection and appropriate disposal as solid waste.
Section 75-10-212, MCA	Section 75-10-212, MCA (Applicable) prohibits dumping or leaving any debris or refuse upon or within 200 yards of any highway, road, street, or alley of the State or other public property, or on privately owned property where hunting, fishing, or other recreation is permitted.	
ARM 17.50.505(1)	ARM 17.50.505(1) (Applicable) provides locational requirements for solid waste management facilities. These requirements include: 1) must be located where a sufficient acreage of suitable land is available, 2) may not be located in a 100-year floodplain, 3) may be located only in areas which will prevent the pollution of ground and surface waters and public and private water supply systems, 4) must be located to allow for reclamation and reuse of the land, 5) drainage structures must be installed where necessary to prevent surface runoff from entering waste management areas, 6) only Class III disposal facilities may be approved where underlying geological formations contain rock fractures or fissures which may lead to pollution of the ground water or areas in which springs exist that are hydraulically connected to a proposed disposal facility.	Both the petroleum LTU and the dioxin/furans soil repository are regulated under these solid waste management regulations and unit locations have been selected to comply with these regulations. The proposed locations of the petroleum LTU and soil repository are shown on Figure 3-4 and the placement of these units includes consideration of reuse of the land. Other wastes and investigation derived waste (IDW) generated during implementation of the remedial action will be placed in the appropriate containers and temporarily stored in an access-controlled outdoor location in a manner that meets solid waste requirements. The temporary storage location will be located outside of the 100-year floodplain. Wastes and IDW will be stored in appropriate containers to prevent pollution of the environment and public and private water supply systems and in compliance with RCRA requirements. If necessary, drainage structures will be installed to prevent surface run-off from entering the waste management area. There are no known rock fractures or fissures, and no hydraulically connected springs at the facility.

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
ARM 17.50.505(2)	ARM 17.50.505(2) (Applicable) specifies special requirements for solid waste management facilities including: 1) Class II landfills must confine solid waste and leachate to the disposal facility. If there is potential for leachate migration, it must be demonstrated that leachate will only migrate to underlying formations which have no hydraulic continuity with any state waters, 2) adequate separation of group II wastes from underlying or adjacent water must be provided (the extent of separation shall be established on a case-by-case basis), 3) new disposal units or lateral expansions may not be located in wetlands	The petroleum LTU will be designed to prevent impact from leachate and the degradation/pollution of the groundwater. The petroleum LTU will utilize a liner and leachate collection system. The leachate will be reapplied to the LTU as part of the bioremediation process. Excess leachate will be disposed. The soil repository will be capped as required by these ERCLS to protect the integrity of the dioxin/furans repository and ensure protection of human health and the environment from exposure to the underlying soil. The LTU will not be located in a wetland and remedial design will include an evaluation and assurance that adequate separation of the waste from the groundwater is achieved.
ARM 17.50.506	ARM 17.50.506 (Applicable) provides design requirements for landfills. Landfills must either be designed to ensure that MCLs are not exceeded or the landfill must contain a composite liner and leachate collection system which comply with specified criteria. ARM 17.50.502(27) defines a landfill as an area of land or an excavation where wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile.	
ARM 17.50.511	ARM 17.50.511 (Applicable) provides specific operational and maintenance requirements for solid waste management systems. Operational and maintenance requirements include: run-on and runoff control systems, fencing around sites to prevent unauthorized access, and prohibitions of point and nonpoint source discharges which would violate the Clean Water Act requirements.	Both the petroleum LTU and dioxin soil repository will be designed to meet the operational and maintenance requirements of the solid waste management regulations, including run-on and runoff control systems, fencing around sites to prevent unauthorized access, and prevention of point and nonpoint source discharges which would violate the Clean Water Act requirements.
ARM 17.50.523	ARM 17.50.523 (Applicable) requires that waste be transported in such a manner as to prevent its discharge, dumping, spilling, or leaking from the transport vehicle. This applies to the off-site disposal of the lead contaminated soils.	Non-hazardous wastes will be transported offsite to the appropriate disposal facility in roll-offs or dump trucks with cargo covers to prevent spilling, dumping, or leaking from the transport vehicle.
ARM 17.50.525	ARM 17.50.525 (Applicable) states that the DEQ may conduct inspections st solid waste management facilities at reasonable hours upon presentation of appropriate credentials.	The petroleum LTU and dioxin soil repository will be accessible to DEQ personnel for inspections at reasonable hours.
ARM 17.50.530	ARM 17.50.530 (Applicable) sets forth the closure requirements for landfills, including the repository described in the Record of Decision. The requirements for the repository cover include: 1) cap must be minimum of 24 inches, 2) cover designed to minimize infiltration and erosion, 3) design and construct cover such that it has permeability less than or equal to the permeability of any bottom liner, barrier layer, or natural subsoil or a permeability no greater than 1 x 10^{-5} cm/sec, whichever is less, 4) minimize erosion of final cover so that the layer contains a minimum of six inches of earthen material, 5) revegetate the final cover with native plant growth within one year of placement.	The soil repository cap will be designed to meet the solid waste management regulation, including cap thickness, infiltration and erosion prevention, cap permeability, final cover, and revegetation requirements. A post closure plan for inspection and maintenance of the soil repository will be developed and implemented as part of long-term monitoring and maintenance.
ARM 17.50.530(1)(b)	ARM 17.50.530(1)(b) (Applicable) allows an alternative final cover design if the infiltration layer achieves reduction in infiltration at least equivalent to the stated criteria and the erosion layer provides protection equivalent to the stated criteria.	
ARM 17.50.531	ARM 17.50.531 (Applicable) Sets forth post closure care requirements for Class II landfills and is applicable to dioxin/furan contaminated soil repository. Post closure care must be conducted for a period sufficient to protect human health and the environment. Post closure actions must comply with the groundwater monitoring requirements found at ARM Title 17, chapter 50, subchapter 7. The groundwater monitoring requirements of ARM 17.50.701 et seq. will be coordinated with the other monitoring requirements specified by the Record of Decision.	
ACTION SPECIFIC REQUIREMENTS		
Point source Controls		
ARM 17.30.1201 et seq, and ARM 17.30.1301 et seq.	ARM 17.30.1201 et seq, and ARM 17.30.1301 et seq. would be applicable if point sources of water contamination are retained or created by any remediation activity. Applicable Clean Water Act standards would apply to those discharges.	The tasks detailed in the ROD do not indicate there will be point source discharge from water. Leachate collected at the LTUs will be reapplied to the soil within the LTU as part of the bioremediation process. Any excess leachate or groundwater collected during sampling or free product recovery activities will be disposed.
Dredge and Fill Requirements (Applicable)		
	The selected remedy does not involve depositing dredge and fill material into water of the United States. No activities requiring a Section 404 Permit are anticipated	The tasks detailed in the ROD do not require depositing dredge or fill materials into waters of the state.

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
Air Quality Regulations (Applicable)		
	Dust suppression and control of certain substances likely to be released into the air as a result of earth moving, transportation, and similar actions may be necessary to meet air quality standards.	
The Clean Air Act (42 USC §§ 7401 et seq.) Sections 75-2-101, et seq., MCA ARM 17.8.220	The Clean Air Act (42 USC §§ 7401 et seq.) provides limitations on air emissions resulting from cleanup activities or emissions resulting from erosion of exposed hazardous substances. Sections 75-2-101, et seq., MCA (Applicable) provides that state emission standards are enforceable under the Montana Clean Air Act. ARM 17.8.220. (Applicable) Settled particulate matter shall not exceed a 30 day average of 10 grams per square meter.	Activities proposed in the ROD do not include point source discharges, but may include non-point source discharges due to excavation, soil treatment and other land disturbance activities. A SWPPP will be developed prior to implementation of the remedial actions. The SWPPP will include a dust control plan to prevent particles or contaminants from becoming airborne and procedures for air monitoring to verify compliance with ambient air standards. Remedial actions will be halted if air monitoring indicates dust concentrations are approaching air quality limitations and will not resume until adequate dust control measures are in place.
ARM 17.8.222	ARM 17.8.222 (Applicable) Lead in ambient air shall not exceed a 90 day average of 1.5 micrograms per cubic meter of air.	Activities proposed in the ROD include excavation of lead contaminated soil and possible onsite treatment or stabilization activities. During design of the implementation methods, BMPs to prevent emissions during remedial implementation and a detailed monitoring and testing program will be developed including dust control measures to prevent particles or contaminants from becoming airborne and procedures for air monitoring to verify compliance with ambient air standards. Remedial actions will be halted if air monitoring indicates dust concentrations are approaching air quality limitations and will not resume until adequate dust control measures are in place.
ARM 17.8.223	ARM 17.8.223. (Applicable) PM-10 concentrations in the ambient air shall not exceed a 24 hour average of 150 micrograms/cubic meter of air and an annual average of 50 micrograms/cubic meter of air.	Activities proposed in the ROD include excavation, soil treatment and other land disturbance activities. A SWPPP will be developed prior to implementation of the remedial actions. The SWPPP will include dust control measures to prevent particles or contaminants from becoming airborne and procedures for air monitoring to verify compliance with ambient air standards. Remedial actions will be halted if air monitoring indicates dust concentrations are approaching air quality limitations and will not resume until adequate dust control measures are in place.
ARM 17.8.210, 17.8.211, 17.8.212, 17.8.213, and 17.8.214	Ambient air standards for carbon monoxide, hydrogen sulfide, nitrogen dioxide, sulfur dioxide, and ozone. If emissions of these compounds occur at the site in connection with any remedial action, these standards would be applicable.	Activities proposed the ROD are not expected to result in exceedances of ambient air quality standards for carbon monoxide, hydrogen sulfide, nitrogen dioxide, sulfur dioxide, or ozone. If ozone is the oxidant selected for the chemical oxidation system, monitoring of ambient air may be needed.
ARM 17.8.304 and 17.8.308 ARM 17.24.761	ARM 17.8.304 and 17.8.308 (Applicable) state that no person shall cause or authorize the production, handling, transportation, or storage of any material; or cause or authorize the use of any street, road, or parking lot; or operate a construction site or demolition project, unless reasonable precautions to control emissions of airborne particulate matter are taken. Emissions of airborne particulate matter shall not exhibit an opacity of 20% or greater averaged over six consecutive minutes. ARM 17.24.761 (Relevant) specifies a range of measures for controlling fugitive dust emissions during mining and reclamation activities and requires that a fugitive dust program be implemented.	Activities proposed in the ROD do not include point source discharges, but may include non-point source discharges due to excavation, soil treatment and other land disturbance activities. A SWPPP will be developed prior to implementation of the remedial actions. The SWPPP will include dust control measures to prevent particles or contaminants from becoming airborne and procedures for air monitoring to verify compliance with ambient air standards. Remedial actions will be halted if air monitoring indicates dust concentrations are approaching air quality limitations and will not resume until adequate dust control measures are in place.
Groundwater Act (Applicable)		
Section 85-2-505, MCA Section 85-2-516, MCA ARM 17.30.641	Section 85-2-505, MCA (Applicable) precludes the wasting of groundwater. Wells must be constructed and maintained so as to prevent waste, contamination, or pollution of groundwater. Section 85-2-516, MCA (Applicable) states that within 60 days after any well is completed a well log report must be filed by the driller with the Montana Bureau of Mines and Geology. ARM 17.30.641 (Applicable) states that water quality monitoring, including methods of sample collection, preservation, and analysis used to determine compliance with the standards must be in accordance with 40 CFR Part 136 (July 1, 2007) or other method allowed by the department.	New wells constructed for implementation of the ROD will be installed for groundwater monitoring and free product recovery. Wells will be properly constructed to prevent further contamination or pollution of groundwater. Drilling subcontracts will require that drillers complete and file a well log report with the Montana Bureau of Mines and Geology. Compliance water quality monitoring will be conducted using methods approved by DEQ.
ARM 17.30.646	ARM 17.30.646 (Applicable) requires that bioassay tolerance concentrations must be determined using the latest available research results for the materials, by bioassay tests procedures for simulating actual stream conditions as set forth in 40 CFR Part 136 (July 1, 2007).	Bioassays will not be required as part of the tasks detailed in the ROD.
ARM 36.21.670-678 and ARM 36.21.810	ARM 36.21.670-678 and ARM 36.21.810 (Applicable) specify certain requirements that must fulfilled when abandoning monitoring wells.	Monitoring wells will be abandoned in accordance with ARM 36.21.670-678 and ARM 36.21.810.
Substantive MPDES Permit Requirements (Applicable)		
ARM 17.30.1342-1344	ARM 17.30.1342-1344 (Applicable) set forth the regulations and substantive requirements applicable to all Montana Pollutant Discharge Elimination System (MPDES) and National Pollution Discharge Elimination System (NPDES) permits.	The tasks detailed in the ROD do not include wastewater discharges. Leachate collected at the LTUs will be reapplied to the soil within the LTU as part of the bioremediation process. Excess leachate or groundwater collected during sampling or free product recovery activities will be disposed.
Technology-Based Treatment (Applicable)		
ARM 17.30.1203 and 40 CFR Part 125	40 CFR Part 125 provides criteria and standards for the imposition of technology-based treatment requirements. For toxic and nonconventional pollutants treatment must apply the best available technology economically achievable (BAT), for conventional pollutants, application of the best conventional pollutant control technology (BCT) is required. Where effluent limitations are not specified , BCT/BAT technology-based treatment requirements are determined on a case by case basis using best professional judgment (BPJ).	The tasks detailed in the ROD do not include wastewater discharges. Leachate collected at the LTUs will be reapplied to the soil within the LTU as part of the bioremediation process. Excess leachate or groundwater collected during sampling or free product recovery activities will be disposed.

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
Storm Water Runoff		
ARM 17.30.1341-1344	ARM 17.30.1341-1344 (Applicable) states that storm water point sources require a Storm Water Discharge General Permit. The permit requires the permittee to implement Best Management Practices (BMP) and to take all reasonable steps to minimize or prevent any discharge which has a reasonable likelihood of adversely affecting human health or the environment. MPDES permits are applicable to storm water runoff discharges.	Land disturbance activities including excavation of contaminated soils and the soil repository and LTU construction will likely require coverage under the MPDES General Permit. As part of obtaining permit coverage, the implementing entity will be required to submit a SWPPP for remedial activities performed on the KRY Site. The SWPPP addresses the requirements contained in the storm water management regulations. A SWPPP will be developed prior to implementation of the remedial actions and will specify procedures and BMPs to prevent impact of surface waters from site contaminants or sediment.
ARM 17.24.633	ARM 17.24.633 (Relevant) requires that all surface drainage from a disturbed area be treated by the best technology currently available (BTCA).	
RCRA Subtitle C Requirements and corresponding State requirements (Applicable, as incorporated by the Montana Hazardous Waste act)		
RCRA, 42 U.S.C. §§ 6901 et seq., and Montana Hazardous Waste Act, Sections 75-10-401 et seq., MCA	The Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901 et seq., and the Montana Hazardous Waste Act, Sections 75-10-401 et seq., MCA, and regulations under these acts establish a regulatory structure for the generation, transportation, treatment, storage and disposal of hazardous wastes. These requirements are applicable to substances and actions at the site which involve the active management of hazardous wastes, including excavation of listed hazardous waste and the pentachlorophenol land treatment unit described in the Record of Decision. Some requirements may also apply to the lead-contaminated soil if subsequent sampling reveals it is a characteristic hazardous waste.	Hazardous waste generated during implementation of the ROD will be managed in accordance with the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901 et seq., and the Montana Hazardous Waste Act, Sections 75-10-401 et seq., MCA. One onsite LTU will be utilized for treatment of PCP contaminated soil; which is a F032 listed hazardous waste. A hazardous waste transporter is not required to transport hazardous waste from a work area to the LTU or a centralized storage area, provided transportation remains within the CAMU area designated by DEQ. If hazardous waste needs to be transported outside the Facility, a hazardous waste transporter will be used and the hazardous waste will be manifested. Hazardous waste generated during implementation of the ROD, other than the PCP contaminated soil to be treated in the LTU, will be placed in appropriate containers that meet the requirements of RCRA and stored in an access-controlled outdoor location in a manner that meets RCRA requirements. The design of the storage location will be discussed in the design documents prepared by the implementing entity and a checklist specifying each RCRA requirement (ERCL) will be provided in each design document to ensure compliance with all requirements. No hazardous wastes will be disposed of at the site.
40 CFR 261	Wastes may be designated as hazardous by either of two methods: listing or demonstration of a hazardous characteristic. Listed wastes are the specific types of wastes determined by EPA to be hazardous as identified in 40 CFR Part 261, Subpart D (40 CFR 261.30 - 261.33) (Applicable, as incorporated by the Montana Hazardous waste Act). Listed wastes are designated hazardous by virtue of their origin or source, and must be managed as hazardous wastes regardless of the concentration of hazardous constituents. Characteristic wastes are those that by virtue of concentrations of hazardous constituents demonstrate the characteristic of ignitability, corrosivity, reactivity or toxicity, as described at 40 CFR Part 261, Subpart C (Applicable, as incorporated by the Montana Hazardous Waste Act).	The PCP contaminated soil located at the KRY Site has been designated as an F032 listed hazardous waste and will be treated in an onsite LTU until PCP concentrations are below the appropriate cleanup levels, or below the universal treatment standards if the soil is to be disposed of off-site. The petroleum and dioxin/furans contaminated soils, not containing PCP, have been designated as non-hazardous. The lead-contaminated soil at the KRY Site will be further characterized to determine if it is a hazardous waste and will be disposed of based on its characterization.
40 CFR 261.31	40 CFR 261.31 defines F032 waste as: wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with § 261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol. Media at the KRY Site is contaminated with PCP from process residuals, preservative drippage, and spent formulations from a wood treating process that used chlorophenolic formulations. Therefore, the KRY Site contains F032 listed hazardous wastes and the various media and wastes contaminated by the F032 wastes are hazardous pursuant to 40 CFR Part 261.	

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
40 CFR Part 262	The RCRA requirements specified are applicable for the treatment, storage, and disposal of these F032 wastes. The lead-contaminated soil at the KRY Site will be further characterized to determine if it is a hazardous waste. The RCRA regulations at 40 CFR Part 262 (Applicable, as incorporated by the Montana Hazardous Waste Act) establish standards that apply to generators of hazardous waste. These standards include requirements for obtaining an EPA identification number and maintaining certain reports. These standards are applicable for any waste which will be transported offsite.	Hazardous waste generated during implementation the ROD will be handled/transported in accordance with applicable RCRA regulations and the implementing entity must obtain an EPA ID number and file the necessary reports. A hazardous waste transporter is not required to transport hazardous waste from a work area to the LTU or centralized storage area, provided transportation remains within the CAMU area designated by DEQ. If hazardous waste needs to be transported for disposal outside the Facility, a hazardous waste transporter will be used, the hazardous waste will be manifested, and a spill prevention response plan will be in place prior to transport. Hazardous waste to be disposed of offsite at a permitted RCRA disposal facility will be transported by a hazardous waste transporter and will be manifested. No hazardous waste will be disposed of onsite.
40 CFR Part 263 40 CFR 264, Subpart B	The RCRA regulations at 40 CFR Part 263 (Applicable, as incorporated by the Montana Hazardous Waste Act) establish standards that apply to transporters of hazardous waste. These standards include requirements for immediate action for hazardous waste discharges. These standards are applicable for any on-site transportation. These standards are independently applicable for any off-site transportation. The regulations at 40 CFR 264, Subpart B (Applicable, as incorporated by the Montana Hazardous Waste Act) establish general facility requirements. These standards include requirements for general waste analysis, security and location standards.	
40 CFR 264, Subpart F	The regulations at 40 CFR 264, Subpart F (Applicable, as incorporated by the Montana Hazardous Waste Act) establish requirements for groundwater protection for RCRA-regulated solid waste management units (including land treatment units). Subpart F provides for three general types of groundwater monitoring: detection monitoring (40 CFR 264.98); compliance monitoring (40 CFR 264.99); and corrective action monitoring (40 CFR 264.100). Monitoring wells must be cased according to 264.97(c). Monitoring is required during the active life of a hazardous waste management unit. If hazardous waste remains, monitoring is required for a period necessary to protect human health and the environment.	A long term monitoring plan will be developed during the remedial design phase and will comply with the groundwater monitoring requirements.
40 CFR Part 264, Subpart G	40 CFR Part 264, Subpart G (Applicable, as incorporated by the Montana Hazardous Waste Act) establishes that hazardous waste management facilities must be closed in such a manner as to (a) minimize the need for further maintenance and (b) control, minimize or eliminate, to the extent necessary to protect public health and the environment, post-closure escape of hazardous wastes, hazardous constituents, leachate, contaminated runoff or hazardous waste decomposition products to the ground or surface waters or to the atmosphere. Requirements for facilities requiring post-closure care include the following: the facilities must undertake appropriate monitoring and maintenance actions, control public access, and control post closure use of the property to ensure that the integrity of the final cover, liner, or containment system is not disturbed. In addition, all contaminated equipment, structures and soil must be properly disposed of or decontaminated unless exempt and free liquids must be removed or solidified, the wastes stabilized, and the waste management unit covered.	Hazardous waste will be treated in the PCP LTU until PCP concentrations are reduced to cleanup standards or the universal treatment standard (UTS). Once all treated soil meets the appropriate cleanup level or UTS, the LTU will be closed. Hazardous waste will not be left onsite following closure.
40 CFR Part 261, Subpart I	40 CFR Part 264, Subpart I (Applicable, as incorporated by the Montana Hazardous Waste Act) applies to owners and operators of facilities that store hazardous waste in containers. These regulations are applicable to any storage of purge water or other media containing F032 hazardous waste. The related provisions of 40 CFR 261.7 regarding residues of hazardous waste in empty containers are also applicable, as incorporated by the Montana Hazardous Waste Act).	Hazardous waste generated during implementation of the ROD will be placed in containers that meet RCRA requirements and temporarily stored in an access-controlled outdoor location in a manner that meets RCRA requirements. The design of these containers and storage location will be discussed in the design documents prepared by the implementing entity and a checklist specifying each RCRA requirement (ERCL) will be provided in each design document to ensure compliance with all requirements.
40 CFR Part 264, Subpart L	40 CFR Part 264, Subpart L (Applicable, as incorporated by the Montana Hazardous Waste Act) applies to owners and operators of facilities that store or treat hazardous waste in piles. The regulations include requirements for the use of run-on and run-off control systems and collection and holding systems to prevent the release of contaminants from waste piles. These regulations are applicable to any storage in waste piles at the site.	If stockpiles are utilized to temporarily store hazardous wastes, the stockpile will have the appropriate run on/off controls and collection system to prevent the release of contaminants from the piles. The hazardous waste LTU will be designed to also meet these requirements including a liner and leachate collection system.
40 CFR Part 264, Subpart M 40 CFR Part 264, Subpart S	40 CFR Part 264, Subpart M (Applicable, as incorporated by the Montana Hazardous Waste Act) applies to owners and operators of facilities that treat hazardous waste in land treatment units. These regulations are applicable to the design and operation of the pentachlorophenol land treatment unit discussed in the Record of Decision. 40 CFR Part 264, Subpart S (Applicable, as incorporated by the Montana Hazardous Waste Act) provides special provisions for cleanup; 40 CFR 264.552 allows the designation of a corrective action management unit (CAMU) located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated and provides requirements for siting, managing, and closing the CAMU. The CAMU-eligible waste at the KRY Site includes the F032-contaminated soil that must be managed to implement the cleanup. Placement of the CAMU-eligible waste does not constitute land disposal of hazardous waste. If staging piles are needed during remediation, compliance with 40 CFR 264.554 will be required.	Remedial action design and operation involving the PCP LTU shall fulfill the regulations in 40 CFR 264, Subpart M and S. One onsite LTU will be utilized for treatment of PCP contaminated soil; which is a F032 listed hazardous waste. A hazardous waste transporter is not required to transport hazardous waste from a work area to the LTU or a centralized storage area, provided transportation remains within the CAMU area as designated by DEQ. The design of the LTU will be discussed in the design documents prepared by the implementing entity and a checklist specifying each RCRA requirement (ERCL) will be provided in each design document to ensure compliance with all requirements.
40 CFR 264.554	40 CFR 264.554 sets forth a new storage unit called the staging pile. A staging pile must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the staging pile originated. The staging pile must be designed so as to prevent or minimize releases of hazardous wastes and hazardous constituents into the environment, and minimize or adequately control cross-media transfer, as necessary to protect human health and the environment (for example, through the use of liners, covers, run-off/run-on controls, as appropriate). The staging pile must not operate for more than two years and cannot be used for treatment.	If stockpiles are utilized to temporarily store hazardous wastes, the stockpile will have the appropriate run on/off controls and collection system to prevent the release of contaminants from the piles. The hazardous waste LTU will be designed to also meet these requirements including a liner and leachate collection system.

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
40 CFR 268	Because F032 listed waste is present at the site, the RCRA Land Disposal Restrictions (LDRs) treatment levels set for at 40 CFR Part 268 are applicable requirements (as incorporated by the Montana Hazardous Waste Act) including the treatment levels for F032 listed wastes for the disposal of hazardous wastes generated at the facility. With the exception of treated soils, hazardous wastes are prohibited from disposal onsite.	F032 listed wastes will be treated to site-specific cleanup levels or universal treatment standards prior to reuse as fill material onsite, placement in the dioxin/furan soil repository, or offsite disposal as non-hazardous waste. Hazardous waste will not be disposed of onsite. A confirmation sampling plan is required which will provide for data collection and comparison to cleanup levels. DEQ must approve all confirmation sampling results prior to treated soil being reused as fill material onsite, placed in the dioxin/furan soil repository, or disposed of offsite as non-hazardous waste.
Hazardous Waste Identification Rule (HWIR), 63 Fed. Reg. 65874, 40 CFR 268.49(c) (1)(C), and 40 CFR 268.48	The Hazardous Waste Identification Rule (HWIR) for Contaminated Media promulgated at 63 Fed. Reg. 65874 (November 30, 1998) allows listed waste treated to levels protective of human health and the environment to be disposed of onsite without triggering land ban or minimum technology requirements for these disposal requirements. Treated soils containing hazardous waste will need to meet site-specific cleanup levels as well as the LDR treatment standards (applicable, as incorporated by the Montana Hazardous Waste Act)(40 CFR 268.49(c) (1)(C)), which require that contaminated soil to be land disposed be treated to reduce concentrations of the hazardous constituents by 90 percent or meet hazardous constituent concentrations that are ten times the universal treatment standards (UTS) (found at 40 CFR 268.48), whichever is greater, to avoid triggering land ban.	
40 CFR Part 270	40 CFR Part 270 (Applicable, as incorporated by the Montana Hazardous Waste Act) sets forth the hazardous waste permit program. The substantive requirements set forth in 40 CFR Part 270, Subpart C (permit conditions), including the requirement to properly operate and maintain all facilities and systems of treatment and control are applicable requirements.	The implementing entity will be required to obtain a hazardous waste permit in compliance with these regulations.
40 CFR 264.116 and .119, 40 CFR 264.228(a)(2)(i), and 40 CFR 264.228(a)(2)(iii)(B)(C)(D) and .251(c)(d)(f)	For any management (i.e., treatment, storage, or disposal) or removal or detention, the RCRA regulations found at 40 CFR 264.116 and .119 (governing notice and deed restrictions), 40 CFR 264.228(a)(2)(i) (addressing de-watering of wastes prior to disposal), and 40 CFR 264.228(a)(2)(iii)(B)(C)(D) and .251(c)(d)(f) (regarding run-on and run-off controls), are relevant requirements for any waste management units created or retained at the site that contain non-exempt waste. A construction de-watering permit covers similar requirements and is applicable to the site.	The implementing entity will obtain the construction dewatering permit which will address de-watering and run-on and run-off controls. In addition, institutional controls required by DEQ will be placed to ensure the integrity of any waste management units created or retained at the site.
Montana Hazardous Waste Act, Sections 75-10-401 et seq., MCA	The Montana Hazardous Waste Act, Sections 75-10-401 et seq., MCA (Applicable) and regulations under this act establish a regulatory structure for the generation, transportation, treatment, storage and disposal of hazardous wastes. These requirements are applicable to substances and actions at the site which involve listed and characteristic hazardous wastes.	Remedial action design and operation involving the pentachlorophenol (PCP) LTU utilized for treatment of PCP contaminated soil, a F032 listed hazardous waste, requires compliance with these regulations. A hazardous waste transporter is not required to transport hazardous waste from a work area to the LTU or a centralized storage area, provided transportation remains within the CAMU as defined by DEQ. The implementing entity will obtain an EPA ID number and will be registered as a RCRA generator which will determine the specific requirements that apply. If hazardous waste needs to be transported outside the Facility, a hazardous waste transporter will be used and the hazardous waste will be manifested. Hazardous waste generated during implementation of the ROD, other than the PCP contaminated soil to be treated in the LTU, will be contained in appropriate containers that meet the requirements of RCRA and stored in an access-controlled outdoor location in a manner that meets RCRA requirements. The design of these containers and storage location will be discussed in the design documents prepared by the implementing entity and a checklist specifying each RCRA requirement (ERCL) will be provided in each design document to ensure compliance with all requirements. Hazardous wastes will not be disposed of at the site.
ARM 17.53.501-502	ARM 17.53.501-502 (Applicable) adopts the equivalent of RCRA regulations at 40 CFR Part 261, establishing standards for the identification and listing of hazardous wastes, including standards for recyclable materials and standards for empty containers, with certain State exceptions and additions.	
ARM 17.53.601-604	ARM 17.53.601-604 (Applicable) adopts the equivalent to RCRA regulations at 40 CFR Part 262, establishing standards that apply to generators of hazardous waste, including standards pertaining to the accumulation of hazardous wastes, with certain State exceptions and additions.	
ARM 17.53.701-708	ARM 17.53.701-708 (Applicable) adopts the equivalent to RCRA regulations at 40 CFR Part 263, establishing standards that apply to transporters of hazardous waste, with certain State exceptions and additions.	
ARM 17.53.801-803	ARM 17.53.801-803 (Applicable) adopts the equivalent to RCRA regulations at 40 CFR Part 264, establishing standards that apply to hazardous waste treatment, storage and disposal facilities, with certain State exceptions and additions.	
ARM 17.53.1101-1102	ARM 17.53.1101-1102 (Applicable) adopts the equivalent to RCRA regulations at 40 CFR Part 268, establishing land disposal restrictions, with certain State exceptions and additions.	
Section 75-10-422 MCA	Section 75-10-422 MCA (Applicable) prohibits the unlawful disposal of hazardous wastes.	
ARM 17.53.1201-1202	ARM 17.53.1201-1202 (Applicable) adopts the equivalent to RCRA regulations at 40 CFR Part 270 and 124, which establish standards for permitted facilities, with certain State exceptions and additions.	
Underground Injection Control Program		
40 CFR 144 and 146	The Underground Injection Control Program set forth at 40 CFR 144 and 146, set forth the standards and criteria for the injection of substances into aquifers. Wells are classified as Class I through V, depending on the location and the type of substance injected. For all classes, no owner may construct, operate or maintain an injection well in a manner that results in the contamination of an underground source of drinking water at levels that violate MCLs or otherwise adversely affect the health of persons. Each classification may also contain further specific standards, depending on the classification. Compliance with these regulations requires application to the EPA's Underground Injection Control Program for a permit to conduct in-situ chemical oxidation groundwater remediation described in the Record of Decision.	The ROD includes treatment utilizing in-situ chemical oxidation to reduce the groundwater contaminant concentrations. Compliance with the regulation will require an EPA injection permit or authorization prior to implementation. Oxidants will be chosen based, in part, on their lack of detrimental effects on the aquifer.

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
Free Product Removal		
	Information generated during the Remedial Investigation indicates that all known tanks have been removed from the KRY Site but that underground piping associated with the tanks may remain. In addition, there is free product at the site. Therefore, certain storage tank regulations are applicable.	
40 CFR Part 280, Subpart F	40 CFR Part 280, Subpart F (Relevant) sets forth requirements for Release Response and Corrective Action for underground storage tank (UST) systems containing petroleum or hazardous substances. These include initial response, initial abatement measures, site characterization, free product removal, and investigations for soil and groundwater cleanup.	The remedial action will include includes free product removal and soil and groundwater cleanup.
40 CFR 280.43	40 CFR 280.43 (Relevant) specifies groundwater monitoring requirements for underground storage tanks and requires that the monitoring methods used be able to detect the presence of at least 1/8 of an inch of free product on top of the groundwater in the monitoring wells.	Monitoring will be completed as part of the long term monitoring plan. Equipment and methods utilized for monitoring will be able to detect the presence of at least 1/8 inch of free product.
40 CFR 280.64	40 CFR 280.64 (Relevant) provides that where investigations in connection with leaking underground storage tanks reveal the presence of free product, owners and operators must remove free product to the maximum extent practicable as determined by the implementing agency. This regulation also requires that the free product removal be conducted in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable local, State and Federal regulations. 40 CFR 280.64 also provides that abatement of free product migration is a minimum objective for the design of the free product removal system provides that any flammable products must be handled in a safe and competent manner to prevent fires or explosions.	Free product removal methods and procedures will be developed during the remedial design phase. Free product shall be removed to the cleanup level specified in the ROD which is 1/8 inch or less. Recovered free product will be temporarily stored in appropriate containers at a designated onsite storage location. Free product shall be recycled or disposed of in accordance with all solid and hazardous waste ERCLs in a manner that does not degrade water quality.
ARM 17.56.407(1)(f)(vi)	ARM 17.56.407(1)(f)(vi) (Relevant) specifies groundwater monitoring requirements for underground storage tanks and requires that the monitoring methods used be able to detect the presence of at least 1/8 of an inch of free product on top of the groundwater in the monitoring wells.	Monitoring will be completed as part of the long term monitoring plan. Equipment and methods utilized for monitoring will be able to detect the presence of at least 1/8 inch of free product.
ARM 17.56.602(1)(c)	ARM 17.56.602(1)(c) (Relevant) requires that after a release from an underground storage tank system is identified in any manner, owners and operators must investigate to determine the possible presence of free product, begin free product removal as soon as practicable, conduct free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable local, state and federal regulations, This regulation also provides that abatement of free product migration is a minimum objective for the design of the free product removal system and provides that any flammable products must be handled in a safe and competent manner to prevent fires or explosions.	The remedial action is designed to include meeting the requirements associated with corrective action for an underground storage tank system release, including free product removal and soil and groundwater cleanup. Recovered free product shall be recycled or disposed of in accordance with all solid and hazardous waste ERCLs in a manner that does not degrade water quality. During design, the implementing entity will ensure that it addresses how flammable products will be handled.
ARM 17.56.607	ARM 17.56.607 (Relevant) specifies that all free product must be removed to the maximum extent practicable before a release may be considered resolved.	The cleanup level for free product removal is 1/8 inch or less.
ARM 17.56.702	ARM 17.56.702 (Applicable) requires that all tanks and connecting piping which are taken out of the service permanently must be removed from the ground. This applies if any remaining underground piping is encountered during remedial activities.	All known tanks have been removed from the KRY Site, but underground piping associated with the tanks may remain. If underground product lines are encountered during excavation activities, the lines shall be removed in compliance with underground storage tank regulations.
Reclamation Requirements (Relevant)		
	Certain portions of the Montana Strip and Underground Mining Reclamation Act and Montana Metal Mining Act are relevant requirements for activities at the KRY Site. No mining activities are occurring at the KRY Site, these requirements are relevant for the management and reclamation of areas disturbed by excavation, grading , or similar actions.	A SWPPP will be developed as part of the design of the remedial actions. The SWPPP will include dust control measures to prevent particles or contaminants from becoming airborne and impacting adjacent surface or groundwaters. It will also include a description of how backfilling and drainage will be done as well as a revegetation plan to ensure a diverse, effective and permanent vegetative cover is established in compliance with these ERCLs. The long-term monitoring plan will include details on periodic inspections of the backfilled revegetation areas and the dioxin/furan soil repository cap. Grading will be performed to minimize erosion after backfilling is complete and an operation and maintenance plan will be included to measure vegetative success.
Section 82-4-231, MCA	Section 82-4-231, MCA: Requires operators to reclaim and revegetate affected lands using most modern technology available. Operators must grade, backfill, topsoil, reduce high walls, stabilize subsidence, control water, and minimize erosion, subsidence, land slides and water pollution.	
Section 82-4-233, MCA	Section 82-4-233, MCA: Operators must plant vegetation that will yield a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area and capable of self-regeneration.	
Section 82-4-336, MCA	Section 82-4-336, MCA: Disturbed areas must be reclaimed to utility and stability comparable to areas adjacent.	
ARM 17.24.519	ARM 17.24.519: Pertinent areas where excavation will occur will be regraded to minimize settlement.	

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
ARM 17.24.631(1), (2), (3)(a) and (b)	ARM 17.24.631(1), (2), (3)(a) and (b): Disturbances to the prevailing hydrologic balance will be minimized. Changes in water quality and quantity, in the depth to groundwater and in the location of surface water drainage channels will be minimized, to the extent consistent with the selected response alternatives. Other pollution minimization devices must be used if appropriate, including stabilizing disturbed areas through land shaping, diverting runoff, planting quickly germinating and growing stands of temporary vegetation, mulching, and control of toxic-forming waste materials.	
ARM 17.24.633	ARM 17.24.633: Surface drainage from a disturbed area must be treated by the best technology currently available (BTCA). Treatment must continue until the area is stabilized.	
ARM 17.24.635, 636, and 637	ARM 17.24.635, 636, and 637: Set forth requirements for temporary and permanent diversions.	
ARM 17.24.638	ARM 17.24.638: Sediment control measures must be implemented during operations.	
ARM 17.24.640	ARM 17.24.640: Discharges from diversions must be controlled to reduce erosion and enlargement of stream channels, and to minimize disturbance of the hydrologic balance.	
ARM 17.24.641	ARM 17.24.641: Practices to prevent drainage from acid or toxic forming spoil material into ground and surface water will be employed.	
ARM 17.24.643 - 646	ARM 17.24.643 through 17.24.646: Provisions for groundwater protection, groundwater recharge protection, and groundwater and surface water monitoring.	
ARM 17.24.701 and 702	ARM 17.24.701 and 702: Requirements for redistributing and stockpiling of soil for reclamation. Also outline practices to prevent compaction, slippage, erosion, and deterioration of biological properties of soil.	
ARM 17.24.703	ARM 17.24.703: When using materials other than, or along with, soil for final surfacing in reclamation, the operator must demonstrate that the material (1) is at least as capable as the soil of supporting the approved vegetation and subsequent land use; and (2) the medium must be the best available in the area to support vegetation. Such substitutes must be used in a manner consistent with the requirements for redistribution of soil in ARM 17.24.701 and 702.	
ARM 17.24.711	ARM 17.24.711: Requires that a diverse, effective and permanent vegetative cover of the same seasonal variety and utility as the vegetation native to the area of land to be affected must be established. This provision would not be relevant and appropriate in certain instances, for example, where there is dedicated development.	
ARM 17.24.713	ARM 17.24.713: Seeding and planting of disturbed areas must be conducted during the first appropriate period for favorable planting after final seedbed.	
ARM 17.24.714	ARM 17.24.714: Mulch or cover crop or both must be used until adequate permanent cover can be established.	
ARM 17.24.716	ARM 17.24.716: Establishes method of revegetation.	
ARM 17.24.717 and Section 82-4-233, MCA	ARM 17.24.717: Relates to the planting of trees and other woody species if necessary, as provided in § 82-4-233, MCA, to establish a diverse, effective, and permanent vegetative cover.	
ARM 17.24.718	ARM 17.24.718: Requires soil amendments if necessary to establish a permanent vegetative cover.	
ARM 17.24.721	ARM 17.24.721: Specifies that rills or gullies must be stabilized and the area reseeded and replanted it the rills and gullies are disrupting the reestablishment of the vegetative cover or causing or contributing to a violation of water quality standards for a receiving stream.	
ARM 17.24.723	ARM 17.24.723: Requires periodic monitoring of vegetation, soils, water, and wildlife.	
ARM 17.24.724	ARM 17.24.724: Specifies how revegetation success is measured.	
ARM 17.24.726	ARM 17.24.726: Sets the required methods for measuring vegetative success	
ARM 17.24.731	ARM 17.24.731: If toxicity to plants or animals is suspected, comparative chemical analysis may be required	
ARM 17.24.751	ARM 17.24.751: Measures to prevent degradation of fish and wildlife habitat will be employed.	
ARM 17.24.761	ARM 17.24.761 (Relevant) specifies a range of measures for controlling fugitive dust emissions during mining and reclamation activities and requires that a fugitive dust program be implemented.	

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
Noxious Weeds (Applicable)		
Section 7-22-2101(8)(a), MCA	Section 7-22-2101(8)(a), MCA defines "noxious weeds" as any exotic plant species established or that may be introduced in the state which may render land unfit for agriculture, forestry, livestock, wildlife, or other beneficial uses or that may harm native plant communities and that is designated: (i) as a statewide noxious weed by rule of the department of agriculture; or (ii) as a district noxious weed by a district weed board, following public notice of intent and a public hearing.	The district weed board will be notified of the remediation actions at least 15 days prior to excavation. Periodic inspections of revegetated areas will be performed until vegetation is successfully established. These inspections will include noxious weed surveys and mitigation will be performed as necessary.
ARM 4.5.201 - 204	ARM 4.5.201 - 204 list designated noxious weeds.	
Section 7-22-2109(2)(b), MCA	Section 7-22-2109(2)(b), MCA requires that the board establish weed management criteria.	
Section 7-22-2152, MCA	Section 7-22-2152, MCA requires that any person proposing certain actions including but not limited to a solid waste facility, a highway or road, a commercial, industrial, or government development, or any other development that needs state or local approval and that results in the potential for noxious weed infestation within a district shall notify the district weed board at least 15 days prior to the activity. The person committing the action shall submit a written plan specifying the methods to be used to accomplish revegetation.	
OTHER LAWS (NON-EXCLUSIVE LIST)		
	The following laws are included to provide a reminder of other legally applicable requirements for actions being conducted at the KRY Site. This is not an exhaustive list of such legal requirements, but are included because they set out related concerns that must be addressed and, in some cases, may require some advance planning.	
29 CFR 1910	The federal Occupational Safety and Health Act regulations found at 29 CFR 1910 are applicable to worker protection during remedial activities.	A site specific health and safety plan (HASP) will be developed and implemented for remedial activities performed on the KRY Site. The HASP will include information on site hazards, job procedures, emergency response, personnel training requirement, site control, air monitoring, and personnel protection equipment.
ARM 17.38.101	ARM 17.38.101 (Applicable) provides construction standards for reconstruction or modification of any public water supply line or sewer line. This regulation would be applicable if the remedial action at the site requires any reconstruction or modification of public water supply or sewer lines.	Reconstruction or modification of public water supply lines or sewer lines will be performed in accordance with applicable standards.
Section 85-2-101, MCA	Section 85-2-101, MCA declares that all waters within the state are the state's property, and may be appropriated for beneficial uses. The wise use of water resources is encouraged for the maximum benefit to the people and with minimum degradation of natural aquatic ecosystems.	Activities proposed in the ROD are not expected to not require any water rights to be obtained or a permit to be obtained. If required, water rights and/or a permit will be obtained.
Parts 3 and 4 of Title 85, Chapter 2, MCA	Parts 3 and 4 of Title 85, Chapter 2, MCA set out requirements for obtaining water rights and appropriating and utilizing water. All requirements of these parts are laws which must be complied with in any action using or affecting water of the state. Specific requirements are set forth below	
Section 85-2-301, MCA	Section 85-2-301, MCA provides that a person may only appropriate water for a beneficial use.	
Section 85-2-302, MCA	Section 85-2-302, MCA specifies that a person may not appropriate water or commence construction of diversion, impoundment, withdrawal or distribution works therefore except by applying for and receiving a permit from the Montana Department of Natural resources and Conservation (DNRC).	
Section 85-2-306, MCA	Section 85-2-306, MCA specifies the conditions on which groundwater may be appropriated and, at a minimum, requires notice of completion and appropriation within 60 days of well completion.	
Section 85-2-311, MCA	Section 85-2-311, MCA specifies the criteria which must be met in order to appropriate water and includes requirements that: 1) there are unappropriated waters in the source of supply, 2) the proposed use of the water is a beneficial use, and 3) the proposed use will not interfere unreasonably with other planned uses or developments.	
Section 85-2-402, MCA	Section 85-2-402, MCA specifies that an appropriator may not change an appropriated right except as provided in this section with approval of the DNRC.	
Section 85-2-412, MCA	Section 85-2-412, MCA provides that, where a person has diverted all of the water of a stream by virtue of prior appropriation and there is a surplus of water, over and above what is actually necessarily used, such surplus must be returned to the stream.	

Federal or State ERCL Citation	Description	Preliminary Identification of Compliance
Section 85-2-506, MCA	Pursuant to § 85-2-506, MCA, designation of a controlled groundwater area may be proposed if: (i) excessive groundwater withdrawals would cause contaminant migration; (ii) groundwater withdrawals adversely affecting groundwater quality within the groundwater area are occurring or are likely to occur; or (iii) groundwater quality within the groundwater area is not suited for a specific beneficial use.	Institutional controls identified in the ROD include the establishment of a controlled groundwater area at the site. DEQ will determine the timing of the petition to the Department of Natural Resources and Conservation necessary to begin the rulemaking process to implement a controlled groundwater areas in compliance with these requirements.
Section 85-2-507, MCA	Pursuant to § 85-2-507, MCA the Montana Department of Natural Resources and Conservation may grant either a permanent or temporary controlled groundwater area. The maximum allowable time for a temporary area is two years, with a possible two-year extension.	
Sections 50-70-101 et seq., MCA	The Occupational Health Act of Montana regulations found at Sections 50-70-101 et seq., MCA are applicable to the health and safety of workers during remedial activities.	A site specific HASP will be developed and implemented for remedial activities performed on the KRY Site. The HASP will include information on site hazards including noise, job procedures, emergency response, personnel training requirement, site control, air monitoring, and personnel protection equipment.
ARM 17.74.101	ARM 17.74.101 addresses occupational noise. In accordance with this section, no worker shall be exposed to noise levels in excess of the levels specified in this regulation. This regulation is applicable to limited categories of workers and for most workers the similar federal standard at 29 CFR 1910.95 applies.	
ARM 17.74.102	ARM 17.74.102 addresses occupational air contaminants. The purpose of this rule is to establish maximum threshold limit values for air contaminants under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse health effects. In accordance with this rule no worker shall be exposed to air contaminant levels in excess of the threshold limit values listed in the regulation. This regulation is applicable only to limited categories of workers and for most workers the similar federal standard in 29 CFR 1910.1000 applies.	
Sections 50-71-201, 202, and 203, MCA	Sections 50-71-201, 202, and 203, MCA state that every employer must provide and maintain a safe place of employment, provide and require use of safety devices and safeguards, and ensure that operations and processes are reasonably adequate to render the place of employment safe. The employer must also do every other thing reasonably necessary to protect the life and safety of its employees. Employees are prohibited from refusing to use or interfering with the use of safety devices.	
Sections 50-78-201, 202, and 204, MCA	Sections 50-78-201, 202, and 204, MCA state that each employer must post notice of employee rights, maintain at the work place a list of chemical names of each chemical in the work place, and indicate the work area where the chemical is stored or used. employees must be informed of the chemicals at the work place and trained in the proper handling of the chemicals.	

APPENDIX B

LIST OF REGULATORY CONTACTS AND STAKEHOLDERS

APPENDIX B. LIST OF REGULATORY CONTACTS AND STAKEHOLDERS
KRY SITE, KALISPELL, MONTANA

CONTACT INFORMATION		PROJECT ROLE
Name	Moriah Bucy	DEQ's KRY Site Project Manager
Company	DEQ	
Address	1100 Last Chance Gulch Helena, MT 59620	
Phone	406-841-5064	
Fax	406-841-5050	
Email	mbucy@mt.gov	
Name	Denise Martin	DEQ Hazardous Waste Site Response Section Supervisor
Company	DEQ	
Address	1100 Last Chance Gulch Helena, MT 59620	
Phone	406-841-5060	
Fax	406-841-5050	
Email	demartin@mt.gov	
Name	Norm Brown	Mission Mountain Railroad General Manager
Company	Mission Mountain Railroad	(Railroad Operator for Main and Spur Lines)
Address	720 3rd Street West Columbia Falls, MT 59912	
Phone	406-892-3293	
Fax	406-892-3295	
Email	nbrown@watcocompanies.com	
Name	Brad Snow	Watco Companies Director of Real Estate
Company	Watco Companies	(Contact for Environmental Access Application for Main Rail Line)
Address	315 West 3rd Street Pittsburg, KS 66762	
Phone	620-231-2230	
Fax	620-231-0812	
Email	bsnow@watcocompanies.com	
Name	Erik Anderson	Engineer
Company	NorthWestern Energy	(Contact for gas line issues)
Address	40 East Broadway Butte, MT 59701	
Phone	406-497-3216	
Fax		
Email	erik.anderson@northwestern.com	
Name	Jeff Hider	Glacier Stone Supply COO
Company	Glacier Stone Supply	(Operating on Stillwater Forest Products and Montana Mokko Properties)
Address	955 Whitefish Stage Road Kalispell, MT 59901	
Phone	406-755-5717	
Fax	406-755-5718	
Email	jeff.hider@glacierstonesupply.com	
Name	Jeff Hammett	Property owner and operating business
Company	Klingler Lumber	
Address	250 Flathead Drive Kalispell, MT 59901	
Phone	406-752-4227	
Fax	406-752-1248	
Email		
Company	Swank Enterprises	Property owner
Address	750 West Reserve Kalispell, MT 59901	
Phone	406-752-5411	
Fax	406-756-8765	
Email		

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KRY SITE, KALISPELL, MONTANA

CONTACT INFORMATION		PROJECT ROLE
Name	Dave Smith Manager of Envt. Remediation	Property owner
Company	BNSF Railway Company	
Address	825 Great Northern Blvd., Ste. 105 Helena, MT 59601	
Phone	406-447-2307	
Fax	406-449-8610	
Email	David.Smith4@BNSF.com	
Name	Monte Mason	Property owner
Company	DNRC, Trust Lands Management Div.	
Address	P.O. Box 201601 Helena, MT 59620	
Phone	406-444-3843	
Fax	406-444-2684	
Email	mmason@mt.gov	
Name	Mike Pence	Flathead County Administrator
Company	Flathead County	
Address	800 S. Main St. Kalispell, MT 59901	
Phone	406-758-5501	
Fax	406-758-5861	
Email	mpence@flathead.mt.gov	
Name	Katharine Thompson	Community & Economic Development Director
Company	City of Kalispell	
Address	P.O. Box 1997 201 1st Ave. East Kalispell, MT 59903	
Phone	406-758-7743	
Fax	406-758-7742	
Email	kdanielson@kalispell.com	
Name	Dale Augusta	Manager
Company	Pacific Steel & Recycling	
Address	105 Montclair Dr. Kalispell, MT 59901	
Phone	406-755-7011	
Fax	406-755-7010	
Email	dale_augusta@pacific-steel.com	
Name	Roberta Struck	Manager
Company	Evergreen Water & Sewer District	
Address	130 Nicholson Dr. Kalispell, MT 59901	
Phone	406-257-5861	
Fax		
Email		
Name	Robert (Bob) Parmenter	Property Owner
Company	Montana Mokko Inc. & Stillwater Forest Products	
Address	P.O. Box 189 Dillon, MT 59725	
Phone	406-683-3605	
Fax		
Email		
Name	Jan Roberts	Property Owner of OfficeMax property
Company	Kalispell Partners LLC	
Address	P.O. Box 680688 Park City, UT 84068	
Phone		
Fax		
Email	jan@synergyutah.com	

APPENDIX B. LIST OF REGULATORY CONTACTS AND STAKEHOLDERS
KRY SITE, KALISPELL, MONTANA

CONTACT INFORMATION		PROJECT ROLE
Name		Operating business
Company	OfficeMax	
Address	1031 East Idaho	
	Kalispell, MT 59901	
Phone	406-755-9588	
Fax		
Email		
Name	Joe Russell	
Company	Flathead City-County Health Department	
Address	1035 1st Ave. West	
	Kalispell, MT 59901	
Phone	406-751-8100	
Fax	406-751-8102	
Email		